MARITAL DISTRESS:

ITS ROOTS, TREATMENT AND PREVENTION

FROM A BEHAVIOURAL PERSPECTIVE

A thesis presented to the

Department of Psychology,

University of Canterbury

In fulfilment of the requirements for

the Degree of Doctor of Philosophy

by

Lynne Haye

1983

To my father who taught me to value academic achievement, and to Galen and Peter who gave me the necessary support and encouragement to achieve.

FRONTISPIECE

Applied research has different requirements from basic research. Applied research emphasizes outcome versus conceptual analysis; clinical significance versus response simplicity; situational complexity versus stimulus and laboratory simplicity; population heterogeneity versus subject homogeneity; a systems approach versus single variables; subject preferences versus objective apparatus measures; practicality and cost benefits versus statistical significance; and side effects versus central tendency.

So dominant is the scientific research model that clinical outcome researchers have become circumspect. They select correlational studies rather than venture into experimental therapeutics, laboratory analog studies of clinical phenomena rather than clinical situations, college sophomore volunteers rather than patients, and studies that have implications rather than applications.

(Azrin, 1977, p141)

ACKNOWLEDGEMENTS

Initially, I thought of this research as my project, but it soon became obvious that only the combined efforts of many people could make it happen. I was merely the co-ordinator.

I am particularly indebted to Neville Blampied and Dr. John Church for their meticulous supervision of this research, and for their assistance, advice, and encouragement regarding earlier related research. Neville Blampied's contribution went far beyond that of a supervisor in that he assisted me to lead two separate groups, and has been my major source of academic support and inspiration for many years.

Marshall Leaf, Arthur Mitchell, Tom Marshall and Lindsay Sowman generously donated their time to provide able co-leadership of the other five groups, with Marshall Leaf volunteering his services on two separate occasions. Thank you, gentlemen. It was my pleasure to work with you.

I am fortunate to have had the services of several talented research assistants. For two years, Dr. Sally Hassle and Marie Walker have provided dependable assistance with the MICS coding and with data tabulation. Karen Haye assisted with data tabulation at an early stage and, more recently, John McFee has made his graphical mark on the thesis. My thanks to all concerned.

Technical assistance has been freely and cordially provided by John Barton, Laurie Foulds, Glenn Lewis, Howard Patterson and Robin Phillips of the Department of Psychology. Each made a particular contribution to the research, and without their co-operation it could not have succeeded. A special thank you is owed to Glenn Lewis for all the many times he prepared the group room for me.

Secretarial assistance, too, has been generous and efficient. The research generated a considerable amount of typing, most of which was done by Julie O'Brien, and countless telephone calls, most of which were handled by Willy Van Der Goot. Thanks are owed to both ladies.

The task of contacting potential research volunteers was a difficult one. I am grateful to George Sweet of the N.Z. Marriage Guidance Council, the Campbell Centre, and the Christian Family Movement for their help in this endeavour, and to 3ZB, the *Christchurch Star*, the *News Advertiser* and the T.V. News for giving me the opportunity to proselytize.

During the preliminary stages of the research I was fortunate to receive valuable guidance from others who were involved in similar research. I would like to thank Dr. Gerald Patterson of the Oregon Research Institute for making it possible for me to learn to use the MICS code, and to Drs. Gary Birchler, Robert Liberman and Robert Weiss for sharing their knowledge of the field with me. I am particularly grateful for the encouragement I received from Dr. Liberman who provided me with a copy of *Marital Therapy: A Positive Approach to Helping Troubled Relationships* which was, at that time, still in manuscript form, and invited me to use whatever material I considered appropriate in planning my own therapy groups. I have taken advantage of this generous offer, and my approach to behavioural marital therapy has been strongly influenced by the work of Dr. Liberman. Dr Weiss has provided further assistance by way of analysis of MICS data.

The research has been financed in several ways. For almost three years I was in receipt of a University Grants Committee Post-Graduate Scholarship. A substantial grant from the Social Science Research Council has funded the latter stages of the research.

The University of Canterbury provided continuing support for the payment of research assistants and, through the Departments of Psychology and Education, bore most of the overhead costs of the research. I am extremely grateful to the primary source, the long-suffering New Zealand taxpayer for this investment.

Throughout the period of research, I received generous Department support in the form of the equipment and space that was put at my disposal. I would like to thank all members of the academic staff who made possible the agreeable environment in which I was fortunate enough to work. It was difficult to leave that lifestyle behind. My particular thanks go to Dr. William Black and Bruce Jamieson of the academic staff for the advice they provided at the outset.

Finally, and most importantly, my heartfelt thanks go to those people who volunteered to take part in this research. In sharing something of yourselves with me, you taught me far more than I ever taught you.

Research it is said, is a lonely activity. The writing of the research is, indeed, a lonely activity. What makes this lonely activity bearable for me is the knowledge that the research belongs collectively to many people, and that the only way I can repay my debt to so many is to make it available to all.

CONTENTS

PAGE

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

An investigation of marital distress was divided into three separate but related studies. The first involved the investigation of the behavioural model of marital distress. Twenty distressed and twenty nondistressed couples were compared using a multi-dimensional battery of measures, including self-report, quasi-observational, and laboratory observational measures. Several multivariate analyses were performed on the data. In general, results supported the behavioural model which describes marital distress as a failure of partners to exchange a sufficiently high number of *Pleases* relative to *Displeases*, a failure of partners to resolve conflict, and a subsequent development of avoidance behaviours. Consistent with previous results, a stronger relationship was found between marital distress and negative rather than positive behaviours, and the conflict score, as measured by the Areas of Change Questionnaire (ACQ) was found to be the most powerful discriminating of all the self-report and quasi-observational variables. Results of discriminant analyses suggested that husbands' marital satisfaction was more strongly influenced by earlier relationships than was wives' satisfaction, and that wives more readily translated behaviours occurring within a distressed relationship into subjective feelings.

The second study investigated the treatment of marital distress using a structured behavioural-based group training programme. Treatment gains were evaluated using a similar but expanded multi-dimensional battery of measures pre- and posttreatment, and maintenance of gains was evaluated by means of repeated measures on the full test battery at 6, 12, and 18 months, and on an abbreviated version at 3, 9, and 15 months posttreatment. Thirteen couples were trained, and seven couples continued to provide data for the full 18 months.

Data were both pooled and investigated as a series of single cases. Strong treatment effects ($p < .001$) were demonstrated when multiple analyses of variance were performed on pooled self-report and quasi-observational data, and on pooled laboratory observational data pre- and posttreatment. Over time it was found that some gains were more durable than others, with the mean *Please* rate being the least durable, and with maintenance of treatment gains being strongly related to an initial reduction to within nondistressed limits of the ACQ score. Results of the study of single cases indicated that treatment efficacy was related to the degree of pre-existing personality disturbance, to prior learning regarding the appropriateness of expression of feelings, to the availability of alternatives as predicted by social exchange theory and to the diligence with which new skills were practised.

The third study was concerned with the prevention of marital distress. The above training programme was extended to a group of 7 newlymarried couples. Treatment gains and maintenance of gains were evaluated by means of repeated measures on the same test battery as used in Study 2. Measurement was made pretreatment and at 0,3,6,9, and 12 months posttreatment. Results were compared to those of a 7-couple waiting-list control group. Analysis of pooled self-report and quasi-observational data by means of multiple analysis of covariance produced a significant pre- to posttraining effect ($p<.05$), while a comparison of experimental and control groups of repeated measures produced a significant long-term training effect ($p < .001$). No such effects were found when scores on laboratory observational variables were investigated. Results provided only limited support for the classical behavioural model of marital distress, which had been clearly supported in Study 1, and pointed to a surprisingly high incidence of anxiety in a nonclinical population.

Results of the three studies taken collectively suggested that the current behavioural model has oversimplified the development of marital distress. An attempt was made to revise the model, taking account of the contribution made by dysfunctional internal stimuli such as anxiety and negative self-statements, and making explicit the relevance of communication concepts to the behavioural model. Progress toward the development of a general theory of interpersonal relationships was explored, and the implications for society of such progress and of behavioural theory in particular were discussed.

CHAPTER 1

INTRODUCTION

THE SOCIAL CONSEQUENCES OF MARITAL DISTRESS

In 1982 40,582 persons were directly involved in the dissolution of marriage in New Zealand. There were 12,395 divorces, affecting 24,790 adults and 15,792 children (Department of Statistics, 1983). Six years previously the number of divorces granted was 5,401 and ten years prior to that the number was 2,064 (Schlesinger, 1979).

Separation and divorce have been shown to be stressors of the first magnitude (Bloom, White, and Asher, 1979; Rahe 1974) and the consequences of stress may be physically and emotionally serious, or even dangerous (Dohrenwend and Dohrenwend, 1974). Persons who are divorced or separated have been repeatedly found to be over represented among psychiatric patients, while persons who are married and living with their spouse have been found to be under represented (Bloom et al., 1979). The rates of first admissions to psychiatric hospitals for partners with disrupted marriages were found to be nine times higher for males and three times higher for females than rates for partners with intact marriages.

Holmes and Rahe (1967) have developed a measure of stressful life events based on the amount of readjustment required following each such event. Research has shown that people experiencing more stress are more likely to become ill (Holmes and Masuda, 1974) and, in general, widowed, separated and divorced persons have higher rates of illness and disability than married or never married persons.

In reviewing the literature, Bloom et al. (1979) discuss potential negative consequences of marital disruption for children. Distressed children are more likely to behave in ways which cause feelings of anxiety, helplessness, incompetence and depression in the mother. Under such pressure, the mother may become an ineffective parent, provoking further aversive behaviours in the child. Longfellow (1979) suggest several factors which represent potential stressors for the children of disrupted marriages. These include lack of money, relocation, new school, stepfather, less attention and less consistent discipline. The negative consequences of marital disruption for children are, however, not as clear cut as for adults. Stuart (1980) argues that children of single parents are not necessarily worse off than children of two parents, and some may, in fact, be better off since they are no longer exposed to ongoing conflict. Many studies have shown that children of distressed but intact marriages exhibit more delinquent behaviour, and psychosomatic illness than do children of single parents (see Hetherington, 1979, for a review).

In general, research findings support the view that marital conflict and marital disruption are major life stressors for all family members. Both the accumulated stress prior to separation and the traumatic life changes following separation can adversely affect the physical and emotional wellbeing of husbands, wives and children, although not necessarily to the same extent. There is evidence to suggest that males suffer more stress following disruption than do females, whereas children are more stressed when exposed to marital conflict than when in a single parent home. There can be little doubt that the social and financial costs of marital distress constitute a significant drain on society's resources.

THE DEVELOPMENT OF BEHAVIOURAL MARITAL THERAPY

In view of the relevance of marital breakdown to human wellbeing, it is surprising to find that prior to 1960 there were only 75 published papers relating to marital therapy (Olson, 1970). While the number of published papers more than doubled during the 1960's, the field in general was indicted by Olson for its atheoretical approach, and untested interventions. Marriage counselling was seen as a field in which practice had far outrun theory. Olson pointed to the need to develop a theoretical base from which to operate, and the need to bridge the gap between research, theory, and practice. He argued for the exploration of various theoretical approaches in order to develop an integrated, comprehensive approach. Three promising innovations were singled out for comment. They were the incorporation of learning theory (Liberman, 1970) and Rogerian theory (Ely, 1970) into the field of marital therapy, and the development of a communications training programme for engaged couples (Miller, 1970; Nunnally, 1970). Olson concluded that on the basis of the evidence, the above procedures should become a part of the marital therapist's repertoire. Contemporary behavioural marital therapy has developed very much as Olson argued it should develop.

Contingency Management

Adult-child relationships. Much early applied behaviour analysis research was concerned with the behaviour of children (Berkowitz and Graziano, 1972; Patterson, McNeal, Hawkins and Phelps, 1967; Wahler, Winkel, Peterson and Harrison, 1965). Parents and teachers were taught to identify, record, and to reinforce desired child behaviours (or to punish undesired behaviours).

A group of researchers based in Eugene, Oregon, led by G.R. Patterson, made important contributions to this research. Over a period of time, they formulated a set of procedures for intervention and data collection in the homes of aggressive and poorly behaved children (Patterson, 1976a).

Their earliest work had shown that, while out-of-control behaviours could be quickly and successfully managed by parents and teachers, the effects were often shortlived. Parents needed to be taught child management skills in such a way that they could manage, not only the presenting problem behaviour of one child, but other behaviours of that child, and of his or her siblings. The educational component in the programme was provided by a programmed textbook (Patterson and Gullian, 1968).

Patterson and his colleagues developed an extensive observation schedule using direct observations made in the home. Data from this were used to evaluate the effectiveness of new contingency management interventions (Arnold, Levine and Patterson 1975; Patterson, Cobb and Ray, 1973). The results suggested that parents did apply contingency management procedures to the behaviour of siblings as well as to the identified problem child, and that effects were maintained over a 6-month follow-up.

This 'contingency-based' approach to intervention in families, together with its well developed observational techniques, moved naturally into the area of marital therapy, since the extensive observations of family interaction necessarily tapped conflict between spouses, as well as between parents and children.

Adult-adult relationships. From the inception of behaviour therapy, a variety of behavioural techniques were used to alleviate marital problems (Lazarus, 1968) and single case studies were reported (e.g. Goldiamond, 1965). The focus tended to be on the analysis and modification of the behaviour of individuals who happened to be married, rather than on the marital relationship per se.

Research more directly focused on marriage was done by Goldstein and Francis (1969) who successfully trained five wives to extinguish undesirable behaviour in their husbands, rewarding alternative desired behaviours at the same time, and by Goldstein (1971) who trained eight of ten wives to produce significant changes in their husbands' undesired behaviours. In both studies behavioural measures and client reports were used to evaluate the outcome.

Stuart (1969a) argued that successful marriages can be differentiated from unsuccessful marriages on the basis of the frequency and range of reciprocal positive rewards exchanged by both partners. Both reciprocity and attraction develop as a consequence of a history of positive reinforcement. But in a distressed marriage, rates of positive reinforcement are low so that each partner is relatively unattractive and unrewarding to the other. Based on this formulation, Stuart argued that treatment should be directed toward a rapid increase in the rate of mutual positive reinforcement within the dyad, a procedure Stuart called operant-interpersonal treatment.

In this procedure, the rationale for intervention is first explained to participating couples, then each spouse is asked to list three behaviours he/she would most like to accelerate in the other (behaviour changes are formulated in positive terms) and to record the frequency with which the other presently emits the desired

behaviours. Following a baseline period, a series of exchanges is negotiated and contingency contracts are drawn up.

When reciprocity is essentially absent and couples do not trust each other, Stuart (1969a) suggests that a token programme may prove useful. He describes the use of token programmes with four couples who sought treatment as a last resort prior to separating. In each case, conversation tokens were given to the husband by the wife and these could later be exchanged for predetermined degrees of physical affection. All couples were still together after forty-eight weeks. The rate of reported satisfaction increased for all couples in association with the reported behavioural changes. Stuart (1969b) presented what appears to be essentially the same study in a different format, adding one more couple plus an analysis of audio tapes made during treatment sessions with two couples. The data suggest that verbal behaviour during interviews became significantly more positive over time.

Stuart (1976) reported preliminary findings from an evaluation of this treatment given to seven hundred and fifty couples seen by him over a ten-year period. Of the two hundred couples so far investigated, one hundred and seventy-four remained married five years after intervention. This, he argues, is a reasonably positive outcome, particularly as many of the couples initially requested help in determining whether or not they should divorce. The absence of data on baseline rates of divorce per year of marriage makes it impossible to evaluate this claim more stringently.

Communication Training:

Adult-child relationships. Guerney (1964) working in the psychotherapy tradition associated with Carl Rogers, developed a procedure which he referred to as Filial Therapy, with the intention of training parents to be therapists for their children.

The therapy involved training parents in small groups to conduct play sessions with their emotionally disturbed young children using Rogerian techniques of psychotherapy. Parents were trained by explanation, modelling, behavioural rehearsal and feedback.

In a controlled study, Stover and Guerney (1967) filmed and coded mother-child interactions. They found that the experimental group of mothers made significantly more reflective statements that did the control group of mothers. Change in parent behaviour faciliated a desired change in child behaviour, in that children in the experimental group were observed to communicate significantly more "feeling" statements following parent training.

Adult-adult relationships. A similar intervention, Conjugal Therapy, was developed for use with married couples (Ely, Guerney and Stover, 1973). Using data from verbal interaction and self-report measures, significant differences were found between the control and experimental groups (N= 11 couples) with the experimental group having improved on most measures. Conjugal Therapy led to the development of the Conjugal Relationship Enhancement Programme (CRE) and has been further adapted for use with dating couples, while a Parent Adolescent Relationship Development Programme evolved directly from the original parent-child model (Guerney, 1977).

An educational programme, the Minnesota Couples' Communication Program (MCCP), designed specifically to help people take charge of their relationships, was developed during the sixties by a small group of family therapists and researchers from the University of Minnesota Family Study Center (Miller, Nunnally and Wackman, 1976). By teaching couples to understand and change their own patterns of interaction, the MCCP sets out to upgrade the communication skills of many average couples, as opposed to investing heavily in efforts to mend the relationships of a few couples.

Using data from self-report questionnaires, and from audio-taped interactions, it was found that both understanding of interactional patterns, and communication skill increased significantly as compared to a waiting list control group (Miller et al. 1976).

Toward Conceptual Fusion.

During the past decade researchers who began with the quite different emphases outlined above have moved closer together, and have begun to combine contingency management and communication skills training in their therapy procedures. This is shown in a number of published studies, both of single-couple case studies, and in more controlled studies.

The addition of contingency management procedures to a communication-skills based therapy was reported by Rappaport and Harrell (1972) who described a conjoint therapy study using a behaviour exchange model in which couples were taught to eliminate undesirable behaviours on a reciprocal and hierarchical basis, and replace them with more desirable behaviours. Communication skills were taught using modelling, behaviour rehearsal, and verbal feedback.

In a single couple case study, Weiman, Shoulders and Farr (1974) demonstrated the efficacy of the behaviour excahnge model using multiple baselines. The study provides an example of the addition of both communication and sexual skills training to a contingency management procedure. Communication training included practice in the empathic listening skills associated with CRE (Ely et al. 1973). The shaping of communication skills by behavioural techniques during crisis intervention was advocated by Eisler and Hersen (1973).

The Oregon programme. In 1972, Patterson and Hops reported a single case study which, while it began as a family intervention, developed into an innovative approach to marital therapy. Videotapes of couple interaction were made in both laboratory and home settings in order to assess acquisition and transfer of problem-solving skills. Following on from this work a treatment programme, having three major components or modules, was developed at the Oregon Research Institute and the University of Oregon (Weiss, Hops and Patterson, 1973).

One component of the programme involved discrimination training, or 'pinpointing'. Couples were taught to make statements about specific behaviours, rather than generalized criticisms of their partner (e.g. "Last night you were 30 minutes late for dinner" rather than "You have no consideration for me"). Communication skills training was a second major component. Using modelling, behaviour rehearsal and feedback, destructive behaviour patterns were replaced with constructive patterns. A third component comprised direct training in contingency management through assigned reading of the semi-programmed book *Families* by Gerald Patterson (1971), and by training in contracting skills involving the negotiation of written behaviour exchange agreements between partners.

While the main emphasis of the Oregon research has been on behaviour exchange skills, it is apparent that CRE concepts have been assimilated into the communication skills training. These concepts were given even greater emphasis in a later adaptation of the Oregon training programme (Liberman, Levine, Wheeler, Sanders and Wallace, 1976). The Oregon researchers have thus brought together interventions that were developed and validated by independent schools during initial research into the parent-child relationship.

BEHAVIOURAL THEORIES OF MARRIAGE

Behaviour Exchange

The development of the therapy procedures discussed above was guided by and interacted with a behavioural formulation of marriage. Behavioural marital theorists have been particularly influenced by the concepts of social psychological exchange theories. According to Thibaut and Kelley (1959), within any dyad individuals strive to maximize 'rewards' and minimize 'costs', with social interaction being maintained by high level of rewards relative to costs. Over time, social interaction becomes governed by a set of norms reflecting a balance between rewards and costs. In the event of disequilibrium, the disadvantaged partner will attempt to establish a more equitable balance, perhaps by coercive methods, until a new equilibrium obtains. A social learning formulation incorporates exchange concepts with behavioural principles. Within the behavioural tradition, various researchers have used these concepts in different ways, and with different emphases.

Stuart (1969a) describes marital discord as a function of the low rate of positive reinforcers exchanged by spouces, with this low rate of positive reinforcement being experienced as dissatisfaction. Weiss et al. (1973) see marital conflict as resulting from inappropriate behaviour change techniques. Rather than promoting co-operation through positive control tactics, partners in distressed relationships promote resistance or withdrawal by using aversive control tactics.

In an important theoretical paper, Patterson and Reid (1970) applied the concepts of *reciprocity* and *coercion* to family interaction, proposing that for nondistressed relationships, and over an extended period of time, rates of rewards would be reciprocated on an equitable basis.

In a coercive interaction, aversive stimuli are presented in either of two ways - contingently, following certain undesired responses (punishment), or prior to the behaviour which is to be manipulated and then withdrawn only when the person complies (negative reinforcement). Repeated trials ensure that the behaviours of both partners are changed. As one person begins using aversive stimuli, the other may become compliant, withdrawn, or may himself respond with coercion in an attempt to exercise counter control.

Integration of Communication Theory

While these formulations of a behavoural theory of marriage are clearly set within the context of contingency analysis, it is not equally evident that concepts from communication theories have been integrated into the same learning theory model. As analysis and remediation of communication skills deficits was increasingly incorporated into behavioural marital therapy, it appeared that, again, practice was outrunning theory.

In order to maintain congruence between research, theory, and practice, it is crucial that the place of communication concepts within a behavioural framework be made explicit. Only then does the relationship between a behavioural theory of marriage, assessment and intervention become clear.

Weiss (1978) described both verbal and nonverbal components of communication as being part of the stimulus control of behaviour. According to exchange theory, a negative message, or a message perceived as negative is more likely to elicit a negative response. Weiss defines communication skills as "tools" and, in doing so, appears to be making a distinction between "messages" and "communication skills".

The proposed "Integrative Model" (see Weiss, 1978, p.205) conceptualizes marriage in terms of an interaction between "Accomplishments", "Areas of Interaction", and "Stage of Life Cycle". Communication functions are discussed in terms of all Accomplishments ("objectification", "support/understanding", "problem-solving", and "behaviour change", but the "communication process" is described as being but one of 12 "Areas of Interaction". It is unclear what Weiss means by "communication process", how it differs from communication as related to Accomplishments, and how it might be possible to consider it as being separate from other "Areas of Interaction". The model is grandiose, and not particularly useful to the clinician.

O'Leary and Turkewitz (1978a) facilitated the integration of communications theory within a behavioural framework when they wrote that, "All behaviour communicates something within the context of the dyad". They argued that communication skills include such behaviours as pinpointing, asking for clarification, reflection, social reinforcement, and expression of feelings. They did not, however, make it clear that, from a behavioural perspective, these skills must be specifically taught in a way that makes them easier to reinforce.

Stuart (1980) reviewed communications research, and provided a rationale for training couples in five communication change steps: listening; measured self-expression, selective request making; provision of positive and corrective feedback; and clarification of intended meanings. Unlike other theorists, he devoted considerable attention to the role of the nonverbal components of messages. Throughout, the term "communication change" is used rather than "communication skills".

"Communication change" is seen as a prerequisite to behaviour exchange, but not as a distinct entity. The extent to which Stuart integrates communications theory into his social learning approach to marital therapy can be seen in the following statement:

> *Communication is perhaps the one process that is basic to the survival of all organisms. Without skill in a continuum of abilities ranging from the sending of information to the reception and interpretation of data, organisms can neither know about the resources and threats in their surroundings nor effectively control their environments.*
>
> *(Stuart, 1980, p.209)*

Communication represents, for Stuart, the flow of information, and analysis of this flow is never out of place.

Thus while some theorists are attempting to integrate communication and behaviour exchange concepts, the urgent need for an appropriate vocabulary is apparent. When theorists use a variety of words such as "behaviour", "communication", "message", "nonverbal", "skill", it is not at all clear whether the message sent equals the message received.

Integration of Cognitive Theory

Apart from a study by Margolin and Weiss (1979a) there appears to be little interest in evaluating the contribution of cognitive elements to either behavioural treatment or to theory. A recent theoretical debate (Gurman and Knudson, 1978; Gurman, Knudson and Kniskern, 1978; Jacobson and Weiss 1978) has drawn attention to the fact that the behavioural theory of marriage focuses primarily on the overt behaviours occurring within the relationship, to the apparent exclusion of covert behaviours. Clearly, practitioners are using cognitive concepts within their therapy. The theorists, however, have had little to say about unobservable events.

> *If, indeed, cognitions about marriage are independent of the empirical (daily) events of the marital interaction, all that would be required is a technology for changing attitudes independent of behavioural events. Thus, whether or not one actually is treated considerately (appointments and other agreements kept), it would still be possible to increase the cognition, "I am well treated". Clearly, the more that thought and action diverge, the greater the likelihood for social concern!*
>
> *(Weiss, 1978, p.171)*

In order to justify the lack of attention paid to internal events, Weiss appears to be implying that since cognitions about marriage are not independent of daily events, one need only attend to changing daily events in order to change cognitions. Yet elsewhere he talks of a negative message, or a message perceived as negative as being more likely to elicit a negative response. A negatively perceived message is not necessarily a message sent with negative intent. Weiss's argument, however, ignores this.
Despite his assertion that behavioural models are moving more toward incorporating the role of cognitions in behaviour change, and the renaming of his theoretical model (from Behavioral Systems to Cognitive Behavior Systems), he has yet to make explicit the part played by cognitions within his model.

References to cognitive elements within behavioural interventions are common. O'Leary and Turkewitz (1978a) state that a behaviour such as not doing chores might be interpreted as a lack of careing. They suggest that distressed partners have more difficulty in correctly interpreting each other's behaviours.
Yet no reference is made to the explicit inclusion of cognitive change techniques within their intervention.

The gradual integration of communications theory into a behavioural framework facilitates the further integration of cognitive concepts.

The relationship between communication and cognitions is made manifest by Stuart.

> *The real hazards of communication lie in the fact that individuals always respond in part to their outer experience and in part to the stimulation of their own thoughts, feelings and expectations.*
>
> *(Stuart, 1980, p.210)*

Stuart argues that cognitive change and behaviour change are not the same thing, and that they should be applied sequentially. Homework assignments calling for changes in behaviour between sessions result in cognitive changes, which will be most readily accepted if the client is offered a rationale. Cognitive changes may then result in behaviour changes. If behaviour changes are reinforced, further cognitive changes result. According to Stuart, modified thought and feeling patterns are both the antecedents and the consequences of changed behaviour. He discusses the use of cognitive techniques such as "relabelling" and "changing expectancies" in order to bring about cognitive change. The actual promotion of couple interaction changes, however, remains essentially a behaviour change process.

A review of outcome studies indicates that concepts from both communications theory and cognitive theory are being implicitly integrated into practice. The unsystematic use of combinations of contingency management, communications, and cognitive techniques, however, hampers the development of a truly holistic theory and therapy.

MEASUREMENT

Prior to 1970, marital therapy outcome studies depended almost entirely on global ratings of satisfaction as a means of demonstrating improvement in clients. There are, however, major problems with such global rating scales.

Not only are they highly vulnerable to influences other than real changes in relationships, they also fail to capture the complexity of the relationship, to indicate the most appropriate level of intervention, and to identify areas for change. The earliest behavioural studies attempted to avoid these inherent difficulties by using frequency counts of target behaviours.

In response to this new practice, Olson (1972) pointed out that behavioural studies depended primarily on frequency counts for both process and outcome evaluation. Because of this dependence upon a measure which could only be assumed to provide objective data, Olson argued that behavioural studies were conceptually limited, methodologically inadequate and therapeutically restricted. Since then considerable effort has been expended by several research teams to develop more valid and sensitive measurement and diagnostic instruments.

Self-Report and Quasi-Observation Instruments

Two self-report measures, clearly grounded in behavioural theory were devised by the Oregon research team to supplement the traditional Locke-Wallace Marital Adjustment Test. The format of both measures relates to the Weiss "Integrative Model", and subsequent research has shown that they both effectively discriminate between distressed and nondistressed couples.

The Areas of Change Questionnaire (ACQ: Patterson, 1976b) assesses degree of conflict on a 7-point scale ranging from "much more" to "much less" in each of 34 problem areas. The format of the questionnaire is related to the "Accomplishment", or therapeutic goal, of "objectification". For example, the item "I want my partner to help with the housework when asked" pinpoints the problem.

Having pinpointed the problem it is assumed that the further therapeutic goals of "support/understanding", "problem-solving", and "behaviour change" can be more easily accomplished. The content of the questionnaire is related to Areas of Interaction. For example, items include reference to communication, sexual activity, child management, money management, and recreation.

The behavioural model predicts that distressed couples are less able to resolve conflict. In a validation study of the ACQ, Birchler and Webb (1977) showed that distressed and nondistressed couples differed significantly on the mean number of unresolved problem areas, 28.5 and 6.9 respectively.

The second self-report measure, the Inventory of Rewarding Activities (IRA: Birchler, 1975) provides a measure of how individuals distribute their recreational time over a 4-week period. Dissatisfaction with recreational time is a common complaint of distressed couples, and the content of the IRA provides for a comprehensive analysis of this particular "Area of Interaction", while the format facilitates the therapeutic goal of "objectification". The IRA represents a vehicle for accomplishing the further therapeutic goals of "support/understanding", "problem-solving", and "behaviour change" when marital problems involve the distribution of recreational time.

The behavioural model predicts that, in a distressed relationship, spouses engage in avoidance behaviours which take them out of the company of the partner. In a validation study of the IRA, Birchler and Webb (1977) showed that distressed and nondistressed couples differed significantly on the mean proportion of share activities, .45 and .56 respectively.

The Spouse Observation Checklist (SOC: Patterson, 1976b) is a quasi-observational measure explicitly derived from social exchange theory, and designed to assess the frequency with which pleasing and displeasing behaviours are exchanged. Partners are asked to record daily frequencies of occurrences of responses from a comprehensive checklist of clearly specified behaviours.

Christensen and Nies (1980) describe the SOC as having been crucial in the genesis of the behavioural approach to marital therapy. It has been used in basic research, applied research, and as a treatment device. Its content covers all 12 "Areas of Interaction", and its format is closely identified with the therapeutic goal of "objectification".

The behavioural model predicts that distressed couples relative to nondistressed couples will exchange fewer pleasing behaviours and more displeasing behaviours. This prediction has been repeatedly supported by research findings (Birchler, Weiss and Vincent, 1975; Margolin and Weiss, 1978a).

Recently, the reliability of the SOC has been questioned by some investigators (Jacobson and Moore, 1981; Robinson and Price, 1980). It has been criticized for its high degree of subjectivity, much as frequency counts were earlier criticized by Olson (1972). The issues raised by this criticism are more appropriately discussed in Chapter II.

Behavioural Observation Techniques

The use of independent observers to assess marital behaviour is made possible by using the Marital Interaction Coding System (MICS: Patterson, 1976b). This is based upon the system originally developed for analysis of family interaction.

Weiss and Margolin (1977) describe the MICS as being designed to examine specific behavioural exchange events and interchanges within the ongoing patterns in which they occur. Comprising 29 verbal and nonverbal categories, and often condensed following analysis into three summary scores (positive social reinforcement, aversive behaviours and problem-solving behaviour), the MICS is explicitly derived from behavioural theory.

Videotaped interactions are sometimes used therapeutically to provide feedback (Patterson and Hops, 1972; Margolin and Weiss, 1978a). Though not without its critics (Alkire and Brunse, 1974), this type of self-monitoring has proved to be a powerful change agent (Eisler, Hersen and Agras, 1973). The MICS, however, is primarily used as a pre- and posttreatment measure of facilitative and nonfacilitative behaviours, as demonstrated by a 10-minute problem-solving session in the clinical setting.

Analysis of videotaped interactions is potentially an important therapeutic aid in the identification of "Accomplishment" skills deficits. Because of the need for videotape facilities, trained coders, and computer analysis, however, the clinical value of the MICS is limited. Audiotaped interaction in the clinical setting has been used as a more convenient alternative (Koren, Carlton and Shaw, 1980; Stuart, 1969b; Weiss, 1980).

The behavioural model predicts that distressed couples relative to nondistressed couples will display significantly higher rates of aversive behaviour, fewer problem-solving behaviours and less positive social reinforcement. These predictions have been supported by research findings (Birchler, et al. 1975; Vincent, Weiss and Birchler, 1975).

A Decade of Progress

It can be concluded that, to a large extent, both assessment and practice have been guided by theory. Furthermore, assessment has, in turn, largely supported the theories from which the measures were derived. To a lesser extent, theory has been guided by clinical practice. In reviewing a decade of marital and family therapy, Olson, Russell and Sprenkle (1980) concluded that the hallmark of the seventies had been the expansion and refinement of existing theories. For them, the emphasis on observational assessment, and the inter-play of data, theory, and clinical application clearly distinguished the behavioural approach from competing theories. They concluded that the basic principles of behavioural theory were ones which were readily translatable into treatment techniques that could be tested empirically.

OUTCOME STUDIES OF BEHAVIOURAL MARITAL THERAPY

In the section which follows, each study is presented in a standard format to aid comparison. Significant effects are those reported as statistically significant in the original report.

The outcome studies can be divided into two groups, those using a within-subjects design, and those using between-groups designs. This latter group may be further subdivided into studies in which waiting list control groups have been used, those in which different types of marital therapy have been compared, and those in which separate components of behavioural marital therapy have been compared.

Within-Subjects Design

This type of design includes studies of varying degrees of control, ranging from the clinical case study to the multiple baseline study. Those behavioural marital therapy outcome studies employing a within-subjects design are presented in order of design sophistication.

Patterson and Hops (1972)

Design:	Case study
Subjects:	One couple considering divorce, with previous parent training
Format:	Conjoint; cotherapy; 9 weekly sessions plus daily telephone contact
Intervention:	Skills taught included pinpointing, discrimination training using video feedback, problem-solving, and contingency contracting. Selected reading from Lederer and Jackson (1968) was assigned
Measures:	Daily reading of *Pleases* and *Displeases* received Pleasant thoughts about spouse Marital Interaction Coding System (MICS) Videotaped family interaction
Outcome:	The *Please* and *Displease* count proved unsatisfactory, but there was a significant improvement in problem-solving skills, as measured by the MICS. Pleasant thoughts were unchanged for the female, and increased for the male
Follow-up:	There was a nonsignificant overall improvement in family interaction, but marked improvement in the behaviour of the father and "problem" child. The duration of couple interaction was significantly increased.

Stuart (1969b)

Design:	Series of case studies
Subject:	Five couples considering divorce
Format:	Conjoint; 7 sessions, duration unspecified
Intervention:	Tokens were used to mediate behaviour exchanges
Measures:	Self-report measure of marital satisfaction. Frequency counts of daily hours of conversation and weekly sexual contacts. Audiotaped couple interaction (2 couples only).
Outcome:	Marital satisfaction scores improved, and the frequency of both conversation and sexual contact increased. Where recorded, positive verbal behaviours increased, and negative behaviours decreased over time.
Follow-up:	Gains in conversation, sexual contacts, and marital satisfaction were maintained. Follow-up was from 24 to 52 weeks.

Weiss, Hops and Patterson (1973); Patterson, Hops and Weiss (1975)

Design:	Series of case studies; pooled data
Subject:	Ten "moderately distressed" couples, referred or self-referred
Format:	Conjoint; cotherapy; six weekly 1-1½ hour sessions plus regular telephone contacts
Intervention:	Couples were taught to discriminate *Pleases* and *Displeases*, and were given video feedback regarding their ability to pinpoint and to make positive requests for change. Therapists modelled active listening, verbal reinforcement, and alternatives to put-downs. "Good faith" contingency contracts were negotiated and implemented, and reading from *Families* (Patterson, 1971) was assigned. The intervention was described as modular, with training in each module facilitating the skills required for the next module
Measures:	Daily *Please* count (9 couples), and *Displease* count (8 couples) Marital Adjustment Test (MAT) (5 couples) Areas of Change Questionnaire (ACQ) (5 couples) Marital Activities Inventory (MAI) (5 couples) Marital Interaction Coding System (MICS) (10 couples)
Outcome:	MICS scores improved significantly from pre- to posttreatment. Significant increases in *Pleases* were reported by both husbands and wives, while only husbands reported a significant decrease in *Displeases*. Significant improvements were reported in MAT and ACQ scores, but not in MAI scores. Three couples produced inconsistent results across criterion measures
Follow-up:	Seven couples were located 1-2 years after training. Two were divorced. Four of the remaining five reported increased satisfaction and fewer conflicts.

Azrin, Naster and Jones (1973)

Design:	Within subjects comparison between experimental and catharsis conditions; pooled data
Subjects:	Twelve couples, referred or self-referred
Format:	Conjoint; 6 twice-weekly 1-hour sessions of catharsis counselling (nonspecific control condition) followed by 8 twice-weekly sessions of Reciprocity Counselling
Intervention:	During the catharsis counselling (to control for nonspecific attention-placebo effects), couples talked about their problems. During the Reciprocity Counselling stage, couples learned to pinpoint, to discriminate *Pleases* and social reinforcement, and to negotiate and contract. Specific problem areas were dealt with sequentially, and daily ratings of marital satisfaction were recorded in 9 problem areas. Records were exchanged daily, and discussed by spouses. Readings from Ellis (1966) were assigned
Measures:	Marital Happiness Scale (10-point rating scale)
Outcome:	Mean ratings of overall happiness during catharsis counselling and by the end of reciprocity training were 5 and 7, respectively. Mean ratings of happiness in each area were higher following reciprocity training than for the control condition. Improvements were noted in areas not yet dealt with, as skills generalized. Further improvements were noted following intervention in these areas
Follow-up:	A 1-month follow-up showed a mean overall satisfaction score of 7.5. Within the first year following counselling one couple separated

Hickok and Komechak (1974)

Design:	ABA design, with A= tokens and B= no tokens
Subjects:	One couple "in crisis"
Format:	Conjoint; cotherapy; 10 sessions, duration unspecified
Intervention:	Contingency management concepts and discrimination of appropriate male sexual behaviours were presented didactically. The husband, but not the wife, was given assertion training. Behaviour exchange was mediated by a 6-token system
Measures:	Frequency counts of sexual contacts, and wife's time out of the house

Outcome: A steady improvement was noted, with no change in the slope of the culminative frequency curves during the reversal period

Follow-up: A home visit two months following treatment showed family interaction to be much improved over baseline. Intercourse was reported at a rate of twice per week, as compared to twice per month at baseline. Both partners were experiencing sexual satisfaction, and the wife was spending less time away from the husband by choice

Wieman, Shoulders, and Farr (1974)

Design: Multiple baseline across different behaviours

Subjects: 1 couple, severely distressed

Format: Conjoint; cotherapy; 20 sessions, duration unspecified

Intervention: Contingency management concepts and sensate focus techniques were presented didactically. The couple was trained to pinpoint, and to use feeling talk and empathetic listening. Three target behaviours were selected by each partner, with behaviours being paired for exchange according to degree of difficulty. All behaviours were recorded for the duration of therapy. The exchange of paired behaviours was sequential from least to most difficult

Measures: Marital Adjustment Test
Conjugal Life Questionnaire
Frequency counts of target behaviours

Outcome: Scores on both questionnaires improved. Multiple baseline data suggests that improvement in all problem areas was related to the reciprocal exchange of paired behaviours. The husband reported abatement of his ulcer condition, and the wife reported becoming orgasmic during intercourse for the first time

Follow-up: Letters received over the subsequent four months reported continued improvement.

Jacobson (1979)

Design:	Single-subject experiments, using multiple baselines
Subjects:	Six severely distressed couples, with one or both partners having a psychiatric problem
Format:	Conjoint; cotherapy with one couple only; two assessment interviews, treatment sessions plus telephone contact; number of sessions varied from 8 over 15 weeks to 17 over 8 months; number of sessions was unspecified for one couple; duration of sessions, 1-2 hours
Intervention:	Couples were presented with a behavioural rationale, and were asked to record daily *Pleases* and *Displeases* received from spouse. The records were to be exchanged and discussed daily with the spouse, and each partner was told by the therapist to attempt to increase the output of *Pleases*. Following this instructional phase, couples were taught to discriminate those behaviours which seemed to be the best predicators of satisfaction. Problem-solving skills as described in Jacobson (1977) were taught and practised at home. Practice sessions were recorded, and recordings brought to the next session. Treatment was faded
Measures:	Spouse Observation Checklist (SOC) Marital Adjustment Test (MAT) Areas of Change Questionnaire (ACQ) Marital Interaction Coding System (MICS)
Outcome:	One couple terminated prematurely after sporadic data collection. Each of the remaining couples made clinically significant gains on the MAT and ACQ. Positive and negative behaviours as measured by the MICS showed substantial changes in the desired direction for all couples. Multiple baseline data indicated that behaviour change was related to treatment procedures.
Follow-up:	After one year, gains on the MAT and ACQ had been maintained.

Summary. Collectively, the above studies constitute a powerful demonstration of the clinical effectiveness of behavioural marital therapy. Hickok and Komechak (1974), Jacobson (1979), Stuart (1969b), and Wieman et al. (1974) all reported success in modifying severely distressed relationships. Stuart (1969b) introduced the use of tokens to mediate behaviour exchanges. This intervention, however, has not been widely adopted, and Hickok and Komechak (1974) found that change was associated more with the reciprocal exchange established, rather than with the use of tokens, no reversal effect being evident upon the temporary discontinuation of tokens.

More appropriate to the study of treatment effects is the use of multiple baselines (Jacobson, 1979; Wieman et al., 1974). Both studies are well designed and provide strong evidence for the effectiveness of the intervention. Jacobson (1979) solved the ethical dilemma of controlling outcome studies with a group of severely distressed couples by devising several multiple-baseline single-subject experiments.

While methodologically, the Weiss et al. (1973) study can be criticized for not using a control group, the author's use of multidimensional, theoretically-based measures represents an important contribution to the development of objective assessment. In general, the above studies report change on more than one dimension. The exception is the Azrin et al. (1973) study which used only one unvalidated self-report measure to assess change. The Patterson and Hops (1972) study is primarily of interest for its heuristic value.

Follow-up is, for the most part, inadequate. It is often reported informally, assessment is made only once, and no investigator used all treatment-evaluation measures to assess maintenance of gains. Investigators appear much more interested in demonstrating treatment effects than they are in demonstrating maintenance.

Most of the above studies report both outcome and process data. Within-subjects designs are able to combine the report of process data with sophisticated experimental control (Jacobson, 1979; Wieman et al., 1974), however, the potential contribution of process date to theory-building has been largely ignored.

Between-Group Designs

This type of design includes studies in which comparisons have been made between a therapy condition and a no treatment condition, between a behavioural therapy condition and an alternative therapy condition, and between conditions involving different components of behavioural marital therapy. Of those studies concerned with a comparison of components, two have made a direct comparison of contingency contracting and communication skills training, and two have made somewhat esoteric components comparisons.

1. Comparisons between treatment and no-treatment conditions

Harrell and Guerney (1976)

Design:	Random assignment to control or treatment conditions
Subjects:	Sixty couples recruited from a university community; degree of distress unspecified; 30 couples in each condition
Format:	Group (3 couples each); 8 weekly 2-hour sessions
Intervention:	Spouses were taught to identify relationship problems and their own contribution to the problem, and generate and evaluate alternative solutions. Contingency contracts were negotiated. Homework assignments included weekly reading and rehearsal of communications exercises such as active listening
Measures:	Marital Conflict Negotiation Task (audio-taped roleplays) Marital Adjustment Scale Conjugal Life Questionnaire Relationship Change Scale Satisfaction Change Score (2 questions) Handling Problems Change Score (2 questions)
Outcome:	Analysis of audiotapes showed significant improvement in coder rating of overall performance, and in negative verbal behaviour for experimental couples only. Positive verbal behaviour decreased significantly posttreatment. This, however, was an artifact of training since the experimental couples used paraphrasing where previously they may have used "agree" statements. Significant changes were found on only one of the self-report measures, Handling Problems Change Score
Follow-up:	None

Jacobson (1977)

Design:	Random assignment to waiting list control or treatment conditions
Subjects:	Ten distressed self-referred couples; sexual problems excluded; 5 couples in each condition
Format:	Conjoint (with brief periods of concurrent counselling each session); initial interview plus 8 weekly sessions; duration unspecified
Intervention:	Each couple signed a treatment contract and was assigned reading from *Families* (Patterson, 1971). Frequency counts of two spouse problem behaviours were recorded daily. Couples attempted to problem-solve by trial and error. Therapist and video feedback was provided. Problem-solving skills were modelled and rehearsed. "Good faith" contingency contracts were negotiated and implemented. Homework assignments were discussed individually with the therapist each week
Measures:	Marital Adjustment Test (MAT) Frequency counts of target behaviours Marital Interaction Coding System (MICS)
Outcome:	Significant post treatment improvement was found on the two scores derived from the MICS, Negative Problem Solving and Positive Problem Solving. MAT scores also improved significantly. There were no comparable changes in the control group. The multiple baseline data suggested that contracting was effective in promoting specific behavioural changes.
Follow-up:	After 12 months, gains in MAT scores were maintained by the treatment group.

Tsoi-Hoshmand (1976)

Design:	Quasi-experimental; non random assignment to Treatment, Waiting List Control and Normal Control groups; two different geographical locations used
Subjects:	Twenty couples, referred and self-referred; 10 distressed couples in the Treatment group, 4 distressed couples in the Waiting List Control group, and 6 nondistressed couples in the Normal Control group
Format:	Conjoint; initial interview plus five to ten 1-1½ hour sessions
Intervention:	Couples were presented with a behavioural rationale, and written guidelines for problem discussion and for negotiation. The therapist assisted spouses to identify their own contribution to past conflicts, and to clarify their expectations of change.

	Problem-solving roleplay was used, and "quid pro quo" contingency contracts were negotiated and implemented.
Measures:	The Caring Relationship Inventory (CRI) The Kelly-Tharp Marriage Role Questionnaire (MRQ)
Outcome:	Significant changes in relationship satisfaction as measured by the MRQ, and in caring attitudes as measured by the CRI were found for the treatment group only. Mean scores moved from clinical to normal or near normal scores
Follow-up:	None.

Summary. Of the three studies, only Jacobson (1977) provides strong evidence of treatment effectiveness. The evidence of positive change shown by between-groups analysis was supported by within-subject experiments. Well validated measures were used, and a clinically impressive improvement was seen on the MAT. The well controlled design allowed for the inclusion of process date in addition to outcome data, though this was not discussed in relation to theory.

Harrell and Guerney (1976) attempted to simultaneously control the experiment and use a large sample. In doing so, however, they appear to have used an analogue rather than a clinical sample. Since significant changes were reported on only one of the self-report measures, it is possible that the analogue sample was displaying ceiling effects. Such ceiling effects are less likely to be evident when behavioural measures are used. Significant changes were, in fact, found on these measures. The Tsoi-Hoshmand (1976) study is fraught with methodological weaknesses and is open to alternative interpretations.

Follow-up was non-existent in two of the studies (Harrell and Guerney, 1976; Tsoi-Hoshmand, 1976) and inadequate in the third (Jacobson, 1977). Jacobson (1977) assessed maintenance of gains on one measure only, the MAT.

2. Comparisons between behavioural therapy and other therapies

Boelens, Emmelkamp, MacGillavry and Markvoort (1980)

Design:	Random assignment to one of three groups, reciprocity counselling (RC), system-theoretic counselling (ST), and waiting list control (WL)
Subjects:	Twenty-one referred couples; sex problems, psychoses and addictions were screened out; 7 couples per group
Format:	Conjoint; ten 1-hour sessions; 4 different therapists provided the type of therapy to which they were committed
Intervention:	The RC group completed and discussed the Marital Happiness Scale daily and learned contingency contracting skills. The ST group was provided with insight regarding overt and covert power struggles. The WL group had no contact with a therapist
Measures:	Maudsley Marital Questionnaire Marital Deprivation Scale Marital Interaction Coding System (MICS) Main Target Problems (1-5 rating scales) Assessors ratings (1-5 rating scales)
Outcome:	Both treatments led to significant improvement on self-report measures and assessor rating when compared to the control group. No similar improvement was observed on MICS scores, and no significant differences between treatments were found
Follow-up:	Self-report measures only were completed at 1-month and 6-month follow-up. While pooled data indicates that gains were maintained, it is noted that at 6 months, two couples from the ST group had divorced and their data were not included in analysis of between treatment differences.

Crowe (1978)

Design:	Random assignment to one of three groups, Interpretive (I), Behavioural (B), Supportive (S)
Subjects:	Forty-two couples referred for marital problems, sex problems or neurotic problems related to the marriage; active psychoses and organic brain damage were screened out
Format:	Conjoint; same therapist for all conditions; 10 1-hour sessions
Intervention:	The B group was provided with a behavioural rationale, and was taught pinpointing, rephrasing, negotiation and Masters and Johnson techniques. The I group was encouraged to ventilate. The therapist analyzed and interpreted the couple's feelings, and used challenge and side taking. The S group was exposed to a passive and impartial therapist who avoided advising and interpretation, and who intervened only to prevent arguments and long silences
Measures:	The Structued and Scaled Interview to Assess Maladjustment Middlesex Hospital Questionnaire Target problem Questionnaire
Outcome:	Only the B group reported significant improvement in sexual adjustment and general adjustment post treatment. All three groups reported significant improvements on marital adjustment and on target problem
Follow-up:	Only the B group reported significant gains in sexual adjustment at 9 months and 18 months and in general adjustment at 3 months, 9 months and 18 months post treatment. Both the B and I groups continued to report significant improvement in marital adjustment at 18 months. All groups continued to report significant improvements in target problems. However, at the end of 3 months, 6 of the original I group, and 7 of the original S group had opted to take advantage of further therapy. Two of the original B group had done the same.

Liberman, Levine, Wheeler, Sanders and Wallace (1976)

Design:	Consecutive assignment to Behavioural (B) and Interactional (I) groups
Subjects:	Nine couples contemplating divorce; referred
Format:	Group, 4-5 couples plus 3 therapists; 4 couples in the B group, and 5 in the I group
Intervention:	Both groups of couples paid an attendance deposit, received 4 weekly telephone calls for data collection, counted daily *Pleases*, were shown a training film depicting physical affection and verbal feedback and were provided with instructions to promote therapeutic expectations. In addition, the I group was encouraged to ventilate and to share feelings, and was provided with verbal insight into the marital relationship. Specific to the B group was communication skills training using behaviour rehearsal, modelling, prompting, and feedback, and "good faith" contingency contracting.
Measures:	Marital Adjustment Test (MAT) Areas of Change Questionnaire (ACQ) Marital Pre-Counselling Inventory (MPCI) Marital Activities Inventory (MAI) Hours together Shared recreational activities *Pleases* received and given Looking, smiling, touching (in session observations) Marital Interaction Coding System (MICS)
Outcome:	The two treatment groups did not differ on *Pleases* given or received, MAI, MPCI, MAT and ACQ scores, time together, amount of touching or on 3 of the 6 MICS scores, problem-solving, problem description, and positive verbal behaviour. The B group demonstrated significant superiority over the I group on the amount of eye contact and smiling during sessions, on 3 of the 6 MICS scores, negative verbal, negative nonverbal, and positive nonverbal behaviours, and on the congruence score of the ACQ.
Follow-up:	At 2 months and 6 months posttreatment gains in MAT and ACQ score were maintained by both groups.

Summary. Collectively, the three comparative studies demonstrate that some type of marital therapy is better than no therapy at all, but they provide no clear evidence that behavioural-based therapies are superior to other kinds of therapies. Where there are discernible differences they favour the behavioural approach as generating the treatments which produce changes in behaviour as measured by external observation (Liberman et al., 1976), which produce more durable changes (Boelens et al., 1980; Crowe 1978), and which produce change in individual as well as in relationship variables (Crowe, 1978).

In two of the studies, treatment conditions appeared to be genuinely different (Boelens et al., 1980; Crowe, 1978), while there was considerable overlap in the content of the two conditions in the third study (Liberman et al., 1976). This made it difficult to tease out the most active ingredients. In the Boelens et al. (1980) study, neither condition included communication skills training, and neither made much impact on MICS scores. This suggests that without specific training, communication patterns do not change with marital therapy. The greater deterioration of system-theoretic counselled couples over time suggests that insight into the interaction pattern alone is insufficient.

It is unfortunate that assessment across studies was not more consistent, and that Crowe (1976) failed to include a behavioural measure. He is, however, the only investigator to include psychological assessment of the individual as well as assessment of the relationship. Given the wealth of evidence that marital distress is related to individual psychological and health problems, it follows that marital therapy should facilitate individual as well as relationship gains.

Crowe (1976) reported gains in general adjustment for the behavioural group only.

Follow-up was inadequate in two of the studies (Boelens et al., 1980; Liberman et al., 1976). Crowe (1978) reported repeated maintenance data up to 18 months posttreatment. Because of the idiosyncratic nature of the measures, however, they are difficult to evaluate in relation to other studies. Information potentially useful in the matching of clients to therapies was provided by Crowe (1978). Within the behavioural group, the less well-educated did better than the well-educated and, overall, referrals from general practitioners did better than those from psychiatric sources.

3. Comparisons between contingency contracting and communications skill training

O'Leary and Turkewitz (1981)

Design:	Couples matched on age and mean MAT scores; random assignment to one of three groups, Behavioural Therapy (BT), Communications Therapy (CT) or Waiting List Control (WL)
Subjects:	Thirty distressed couples, referred and self-referred; psychiatric problems screened out
Format:	Intake interview for all couples; BT and CT couples received 10 weekly sessions, duration unspecified; presumably conjoint therapy, but this is not specified; fees were charged
Intervention:	The BT group learned "good faith" contingency contracting, and some communication skills by use of modelling and structured exercises. Homework assignments involved the implementation of behaviour change agreements, and the construction of new ones. The CT group was trained to use empathetic listening and clarification. Individual couple interactional difficulties were identified. Homework assignments involved the practice of structured exercises.
Measures:	Marital Adjustment Test (MAT) Primary Communication Inventory (PCI) Positive Feelings Questionnaire (PFQ) Rating of Conflict Resolution (audiotaped roleplay)

Outcome: There were no significant differences between the two treatment groups following intervention. Both groups scored significantly better on the PCI than did the WL group. No significant differences were found between the three groups on the MAT, the PFQ or the behavioural ratings. Age was a strong predictor of outcome with younger couples making more gains with BT, and older couples making more gains with CT.

Follow-up: Treatment gains were maintained at 4 months.

Weiman (1974)

Design: Random assignment to one of 3 groups, Conjugal Relationship Modification (CRM), Reciprocal Reinforcement (RR) or a Waiting List Control (WL)

Subject: Thirty-six couples, self-referred

Format: Group, 4 couples plus 2 therapists; 3 cotherapist pairs, each pair leading one of each type of therapy group; 8 weekly sessions

Intervention: CRM couples were taught Speaker behaviours, such as owning and accepting responsibility for one's feelings, and Listener behaviours, such as empathetic reflection of Speaker's messages.
RR couples were taught "quid pro quo" contingency contraction

Measures: Battery of self-report measures of marital adjustment
Frequency count of spouse's appropriate Speaker and Listener behaviours (CRM couples only)
Positive statements about partner (RR couples only)

Outcome: Both CRM and RR couples were significantly superior to WL couples on the self-report measures, and no significant differences were found between the two treatment groups. Frequency counts increased significantly for both groups

Follow-up: Gains were maintained at 10 weeks.

Summary. Of the two studies in this category, the findings of one indicate that both contingency contracting and communication skills training are significantly superior to no treatment, but do not differ significantly from each other (Wieman, 1974), while the findings of the other indicate that neither contingency contracting nor communication skills training are significantly superior to no treatment on three or four measures (O'Leary and Turkewitz, 1981). It must be noted that the O'Leary and Turkewitz study is not only unable to support the considerable amount of confirming evidence for the effectiveness of behavioural marital therapy, but it is also unable to support the equally impressive confirming evidence for the effectiveness of communication skills training as demonstrated by CRE and MCCP investigators discussed above.

With no way to reconcile such conflicting results, the O'Leary and Turkewitz (1981) study must be considered suspect. Presentation of results is obscure, and interpretation is particularly difficult. Because difference scores rather than pre- and posttreatment raw scores are typically reported, it is impossible to evaluate therapeutic gains, or to make comparisons with other research findings. In both studies, follow-up was inadequate. O'Leary and Turkewitz (1981) found that younger couples reported more gains with behavioural therapy, while older couples reported more gains with communications therapy.

4. Components comparisons

Jacobson (1978a)

Design:	Random assignment to one of four conditions, Good Faith (GF); Quid Pro Quo (QPQ), Nonspecific (NS), Waiting List control (WL)
Subjects:	Thirty-two distressed couples, most self-referred
Format:	Conjoint with 1 of 3 therapists; initial interview plus 8 weekly 1-1½ hour sessions
Intervention:	Treatment for GF couples was as described in Jacobson (1977) Treatment for QPQ couple was identical with that of the GF group, except that the "quid pro quo" form of contracting was used. Differences in contract form are discussed in detail by Weiss, Birchler and Vincent (1974). No specific instructions in problem-solving, communication skills and contracting were given to the NS group, but therapists remained directive, promoted expectancy of therapeutic gain, and assigned homework tasks
Measures:	Marital Adjustment Test (MAT) Marital Happiness Scale (MHS) Marital Interaction Coding System (MICS)
Outcome:	For the two behavioural groups, significant changes in the desired direction were found on the two scores derived from the MICS, Negative Behaviour and Positive Behaviour. No comparable improvements in the two control conditions were noted. MAT scores improved significantly for the behavioural groups, remained the same for the NS group, and deteriorated for the WL group. MHS scores improved significantly for both behavioural groups and for the NS group, but not for the WL group. No differences were found between the GF and QPQ groups on any measure
Follow-up:	Incomplete data, collected at 1 month, 3 months and 6 months after treatment, indicated that while the behavioural groups had maintained gains, the NS group had not.

Margolin and Weiss (1978a)

Design: Analogue; random assignment to one of three conditions, Behavioural Therapy (BT), Attitudinal-Behavioural (AB), and Nonspecific (NS)

Subjects: Twenty-seven distressed couples

Format: Conjoint; intake interview plus four 2-hour sessions

Intervention: BT couples learned to pinpoint desirable events, and worked toward a 100% increase in the output of those events partner had identified as pleasing. Partners trained each other to discriminate "helpful" communication by using a chime and buzzer following helpful and unhelpful responses, respectively. Couples were assigned reading from Weiss and Ford (1975) related to pinpointing, reinforcement, and shaping. AB couples also learned to pinpoint and attempted to increase their output of pleasing events. In order to shape congruent perceptions, both partners coded "helpful" sender responses. Assigned reading included BT reading plus further material from Weiss and Ford related to attribution of blame. In order to effect cognitive restructuring, partners were encouraged to apply nonblaming explanations to situations in which partner's behaviour was perceived as undesirable

Measures: Marital Adjustment Test (MAT)
Areas of Change Questionnaire (ACQ)
Adjective Checklist (AC)
Spouse Observation Checklist (SOC)
Marital Interaction Coding System (MICS)
Pleasant Thoughts (PT)

Outcome: MAT, AB and NS groups reported significant gains, with the AB group significantly higher

ACQ, Only the AB group reported a significant decrease in conflict

AC, AB and BT groups used significantly less negative labels. The NS group reported no change.

SOC, Only the AB group reported a significant increase in *Pleases*. All groups reported decreases in *Displeases*.

MICS, Only the AB group demonstrated a significant increase in positive behaviours. All groups reduced their mean proportion of negative behaviours.

PT, Only the AB group reported a significant increase in pleasant thoughts

Follow-up: None. The intervention was considered to be only a partial treatment and all couples were offered further therapy.

Summary. The major contribution of the Jacobson (1978a) study was to provide further strong evidence for the effectiveness of behavioural therapy over no treatment or a plausible placebo therapy. Following the placebo therapy, significant improvement was observed on one of four measures. Since gains were not maintained, however, it is concluded that placebo and demand characteristics make something less than a lasting contribution when used alone. Mean posttreatment MAT scores for the behavioural group were in the nonclinical range.

Unlike other Jacobson studies, however, Jacobson (1978a) reported no process data. Follow-up data was confined to self-report measures. The debate over the relative merits of "quid pro quo" and "good faith" contracts is of more academic than practical interest and, because data was pooled, idiosyncratic preferences for contract form would not be apparent.

Margolin and Weiss (1978a) investigated components of practical importance. The contribution of explicit cognitive elements were systematically studied, and found to make a significant difference to treatment outcome. As hypothesized, the cognitive-behavioural condition was shown to be the most powerful overall. The study is also important in that it demonstrates improvement in clinical couples across several dimensions following a very brief behavioural intervention, and in that measures were used which attempted to objectify covert events.

CONCLUSIONS

The seventeen studies reviewed provide strong evidence that behavioural marital therapy is effective in treating marital distress, but only suggestive evidence that it is more effective than other forms of marital therapy. A similar conclusion was readed by Jacobson (1978b). Given the limitations of the three comparative study research designs, however, it is not surprising that no unequivocal endorsement of behavioural therapy is possible.

Earlier reviewers have reported generally favourable conclusions regarding the efficacy of the treatment (Greer and D'Zurilla, 1975; Jacobson and Martin, 1976). While Gurman (1973) reported evidence supporting the superiority of the behavioural approach, following further studies, Gurman and Kniskern (1978a) reported being unable to find such evidence, and Gurman and Kniskern (1978b) reported similar deterioration rates following behavioural and other marital therapies.

It is clear, however, that the issue of deterioration following behavioural marital therapy has not been systematically studied. Without a considerable amount of process data, it is difficult to see how it can be adequately defined.

Behavioural research and therapy has, for the most part, focused on producing initial treatment changes. The extent to which initial changes have been maintained has not been investigated with rigour. Follow-up has been largely superficial, unidimensional and of short duration. With the exception of some within-subject studies, follow-up data have been pooled. Thus information regarding the relationship of maintenance of gains to marital problem, and to initial gains has not been available.

To date, behaviour therapists appear to have adopted what seems to work and have incorporated this within a behavioural framework. While the practice of combining contingency management and communication skills training has been endorsed as being expedient (Linehan and Rosenthal, 1979; Luber, 1978), it is apparent that theory lags behind practice in this area. some theorists (Liberman et al., 1976; O'Leary and Turkewitz, 1978a; Stuart, 1980; Weiss, 1978) view both communication and contingency management components as necessary to the contemporary model, while others (Boelens et al., 1980; Mead, 1981) view contingency management as having positive effects even without training in communication skills. Jacobson (1978c), on the other hand, argues that contingency contracting is redundant. And while references to cognitive elements within behavioural interventions are common, only Margolin and Weiss (1978a) make explicit the inclusion of cognitive change techniques within their intervention.

In lieu of a functional analysis, a shotgun approach has been used. While some within-subjects studies provided both process and outcome data, the general tendency has been to develop "bigger and better" treatment packages and to report pooled outcome data. It then becomes impossible to answer such questions as, "What kind of problems are best treated by behavioural marital therapy?", and "What is meant by 'deterioration'?".

Marital distress has been shown to be a major stressor (Bloom et al., 1979), contributing to individual psychological problems and physical illness. With the exception of Crowe (1976), assessment of change following behavioural marital therapy has ignored individual variables and focused entirely on relationship variables. Yet, given the social consequences that have been shown to accrue from individual stress, it would seem important that investigators

demonstrate a reduction in stress-related individual variables following marital therapy.

Communication theorists have addressed themselves, not only to the study of treatment, but also to the study of prevention (Ginsberg and Vogelsong, 1977; Miller et al., 1976). Behavioural theorists, with the exception of Margolin and Louscher (1978) and Margolin and Weiss (1978b) have, however, virtually ignored the study of prevention. The Harrell and Guerney (1976) analogue study with implications of ceiling effects probably provides a clue as to why the issue of prevention is not more widely studied. Preventive training effects can be expected to be more difficult to demonstrate than treatment effects. Nevertheless, an intervention which is grounded in an adequate theory of relationships should be at least as effective in preventing distress as it is in reducing distress.

With the exception of Crowe (1978) and Boelens et al., (1980), the work reviewed is American. Marital distress and the social consequences of that distress are, however, not confirned to the U.S.A. As reported above, the incidence of divorce is a growing problem within New Zealand. There is, therefore, a need to study ways of treating and preventing marital distress using New Zealand couples, and to validate suitable assessment tools.

AIMS

The aims of this study were:

1. To validate several theoretically-based measures of marital distress using a New Zealand sample.

2. To evaluate treatment of a group of distressed couples using multidimensional assessment which includes stress-related individual variables.

3. To investigate long term maintenance of treatment gains by a group of distressed couples.

4. To address such issues as 'deterioration' and what type of relationship problems benefit most from a behavioural intervention, by analyzing results couple-by-couple.

5. To extend the behavioural model from treatment to prevention of marital distress.

CHAPTER II

AN INVESTIGATION OF THE BEHAVIOURAL MODEL OF MARITAL SATISFACTION

A number of studies have attempted to identify components of marital satisfaction. In most of these studies, investigators have been interested in the question: What behaviours are associated with the cognition, "I am satisfied with my marital relationship at level X"? (Weiss and Margolin, 1977).

BEHAVIOUR EXCHANGE

Using the Spouse Observation Checklist (SOC), Wills, Weiss and Patterson (1974) examined the relationship between five classes of daily events and marital satisfaction. Seven nonclinical couples recorded the number of both affectional and instrumental *Pleases* and *Displeases* received from the partner over a 14-day period, and rated satisfaction with daily external events. In addition, daily ratings of marital satisfaction were made. Instrumental behaviours related to such areas of interaction as child management, housekeeping, and personal appearance, while affectional behaviours were ones which conveyed approval, *Pleases*, or disapproval, *Displeases*.

The five independent variables combined to predict 25 percent of the marital satisfaction variance. Two of these five variables, affectional and instrumental *Displeases* accounted for 65 percent of this predicted variance. These results are consistent with earlier sociological studies (e.g. Hawkins, 1967), regarding the relatively greater importance of negative instrumental and affectional dimensions as determinants of satisfaction in marriage. Sex differences were found in the way in which *Pleases* were weighted.

Wives gave more weight to affectional *Pleases*, whereas husbands gave more weight to instrumental *Pleases*.

Barnett and Nietzel (1979) investigated group differences in the reporting of affectional and instrumental *Pleases* and *Displeases*, using 11 happy couples and 11 couples in therapy. No significant differences were found between distressed and nondistressed couples for affectional *Pleases* and *Displeases* or for instrumental *Pleases*. Significant differences were found only for instrumental *Displeases*, with the distressed group reporting more than the nondistressed group. The only behavioural measure of marital interaction that was significantly correlated with overall adjustment as measured by the Marital Adjustment Test (MAT) was the weighted frequency of instrumental *Displeases* ($r = -.43$). A significant correlation between rates of affectional *Displeases* and daily ratings of satisfaction was also found.

The social learning approach to marriage assumes that *Displeases* are weighted more heavily than *Pleases* and are reciprocated with a higher probability. It has been shown that within families (Patterson and Reid, 1970) and between peers (Raush, 1965) aversive behaviours are more likely to be reciprocated than pleasing behaviours. Wills et al. (1974) assessed this tendency to reciprocate particular types of behaviours. Within-couple correlations suggested that the immediate tendency to reciprocate *Displeases* was stronger than for *Pleases*, while between-couples correlations suggest that with respect to *Pleases* but not *Displeases* partners tend in the long run toward equity.

A similar finding has been reported by Birchler et al. (1975). Twelve distressed and 12 nondistressed couples collected data on *Pleases* and *Displeases* received from partners each day for 5 days. The between-couples correlations for *Pleases* were $r = .97$ ($p < .01$) and $r = .74$ ($p < .01$) for the nondistressed and distressed group respectively.

The between-couples correlations for *Displeases*, on the other hand, were r = .26 (n.s) for the nondistressed group and r = .54 ($p < .05$) for the distressed group. The ratio of *Pleases* to *Displeases* for nondistressed couples was 19:1, and for distressed couples the ratio was 3:1.

Jacobson, Waldron and Moore (1980) investigated the reactivity of nine distressed and six nondistressed couples to pleasing and displeasing behaviour. Data were analyzed separately for distressed husbands, distressed wives, nondistressed husbands and nondistressed wives. Pleasing and displeasing behaviours combined to predict from 21 to 31 percent of the daily marital satisfaction variance. Pleasing behaviour accounted for most of the predicted variance in both nondistressed husbands' and wives' satisfaction rating, while displeasing behaviour accounted for most of the predicted variance in both distressed husbands' and wives' satisfaction rating. For nondistressed husbands and wives, displeasing behaviour was uncorrelated with daily satisfaction, and was significantly less predictive of daily satisfaction than it was in distressed couples. Jacobson et al. (1980) concluded that marital distress is characterized by a tendency to react strongly to the delivery of punishers, and to respond in kind. In contrast, the satisfaction of nondistressed partners is enhanced by the delivery of rewarding behaviours while punishing behaviours are not reciprocated nor subjectively reacted to.

While the SOC has undoubtedly made a valuable contribution to the continuing investigation of theoretical concepts and clinical practice, there is currently some debate regarding its utility. Barnett and Nietzel (1979) concluded that the utility of the SOC for identifying important sources of dissatisfaction in marriages over a short time span has been clearly established. Furthermore, they concurred with Wills et al. (1974) that the SOC may prove to be a valuable

instrument for assessing both process and outcome during the course of therapy. Other researchers, however, have questioned the reliability of the SOC.

Reliability Issues Concerning the Spouse Observation Checklist

Christensen and Nies (1980) recruited 50 nondistressed couples to complete a 179-item questionnaire based on the SOC. In order to permit computation of percent agreement between spouses, each selected "spouse" item was used to create a reciprocal "I" item having the same behavioural content. Husbands and wives completed the measure independently for the immediately preceding 24-hour period. Across all items, between all husband and wife pairs, occurrence agreement was only 48 percent, while percent agreement and mean daily happiness rating for the dyad were significantly correlated ($r = .54$, $p < .001$).

Christensen and Nies (1980) concluded that the agreement data clearly indicated that the couples in this study could not use the SOC as a reliable observational instrument, consensus being well below the level typically required in observational research. Furthermore, a significant relationship between percent couple agreement and daily happiness rating could have serious implications for research on couples. Such a relationship may, in part, reflect separate measures of the same phenomenon: subjective feelings about the relationship.

Using an adaptation of the SOC, Robinson and Price (1976) found that those events most strongly related to daily ratings of marital happiness were affectional *Pleases* and instrumental *Displeases*, confirming the earlier findings of Wills et al. (1974). However, when pleasurable affectional and instrumental behaviours were summed, the total frequency was not significantly correlated ($r = .25$), but the weighted

frequency was significantly correlated with daily rating of marital happiness ($r = .61$). This suggests that the subjective impact of the overall level of pleasurable activities is a more important factor in determining ratings of marital happiness than is overt behaviour exchange. In the same study, further evidence, not based on the SOC, was presented which suggested that distressed couples were underreporting the frequency of pleasing behaviours.

Jacobson and Moore (1981) investigated the reliability of spouses as observers of marital behaviours using 16 distressed and 20 nondistressed couples. In addition to completing the SOC, couples completed the Self-Monitoring Checklist in which the wording of the SOC had been altered so that each spouse was reporting on his or her own behaviour. The mean agreement between husbands and wives was 47.8 percent, with distressed couples having a lower agreement than nondistressed: 42 and 52 percent respectively. Jacobson and Moore (1981) concluded that, since 70 percent agreement is usually considered the absolute minimum level of interrater agreement required for observational research, it is clear that spouses cannot be construed as collecting reliable observational data.

Thus a measure which has been shown to be sensitive to relationship changes resulting from behavioural therapy (Jacobson, 1979; Margolin and Weiss, 1978a), and to discriminate distressed and nondistressed couples (Weiss et al., 1973), has also been shown to have low reliability as an observational tool. This finding raises the question as to whether the concept of interrater reliability is appropriate to the assessment of social exchange. While not identical to positive and negative reinforcers, *Pleases* and *Displeases* are similar in that the overt behaviours of the sender must have an impact on the receiver. There is no necessity that the sender or an independent observer experience a similar impact.

Social exchange theory is based on phenomenological rewards and costs, not on objective overt behaviour.

In its various forms, the SOC has sought to measure: (1) ongoing subjective *Pleases* and *Displeases* based on spouse behaviour, (2) retrospective overt spouse behaviours, labelled *a priori* as pleasing or displeasing. In the second case, further phenomenological information has been obtained by asking respondents to weight each spouse behaviour as to degree of pleasure or displeasure derived. The findings of Christensen and Nies (1980), Jacobson and Moore (1981), and Robinson and Price (1976) all suggest that the SOC is as much a phenomenological measure as it is a behavioural measure. It is perhaps the inclusion of weightings that has been responsible in large part for the utility of the SOC.

Behavioural theory of marriage has had little to say regarding the cognitive set through which people selectively attend to external stimuli. Research findings related to the SOC suggest that this has been a significant omission. According to Jacobson and Moore (1981), clinicians need to know not just what is actually happening in a distressed relationship, but also what each spouse perceives as happening.

CONFLICT AND SPOUSE AVOIDANCE

Another basic assumption of the learning theory approach is that distressed couples are less effective problem-solvers than nondistressed couples. Without problem-solving skills, unresolved problems accumulate and aversive behaviour change strategies predominate. As the aversiveness of the relationship increases, couples might be expected to avoid engaging in shared activities and to spend more time alone or with others.

Using 50 nondistressed and 50 distressed couples, Birchler and Webb (1977) found significant group differences with respect to conflict (as measured by the Areas of Change Questionnaire) and shared activity (as measured by the Marital Activities Inventory).

Distressed couples reported a mean conflict score of 28.5, as compared to 6.9 for the nondistressed couples ($p < .001$). Both distressed and nondistressed couples reported experiencing similar types of problems, but with different frequencies (Birchler, 1979). The percentage of shared activities reported by distressed and nondistressed groups was 46 and 56 respectively ($p < .001$). The study by Birchler et al. (1975) reported essentially the same values: 58 and 43 percent respectively.

The Marital Activities Inventory has evolved into the Inventory of Rewarding Activities (IRA). Barnett and Nietzel (1979) found, over a 4-week period, that the IRA yielded significant differences between distressed and nondistressed couples on four of five different measures: Performance of rewarding activities alone, with spouse, with family members, with spouse and others. While the sensitivity of the Areas of Change Questionnaire to changes during and following therapy has been shown (Jacobson, 1979; Weiss et al., 1973), the sensitivity of the IRA to such changes has yet to be demonstrated.

LABORATORY OBSERVATIONS

It has been repeatedly shown that a positive relationship exists between marital adjustment and the couple's ability to communicate. As discussed in Chapter I, improved communication is often the specific focus of marital therapy, and self-report measures of communication are often used to evaluate change.

Such self-report measures have been used to investigate the correlation between marital adjustment and communication (Murphy and Mendelson, 1973a; Navran, 1967).

An alternative to the use of self-report measures in the study of communication is the use of observational methods. Murphy and Mendelson (1973b) reviewed early observational data and identified two components of observational studies: (1) the interactional stimulus, (2) measurement. Examples of interactional stimuli which have been used include a questionnaire (Ferreira and Winter, 1965), a colour matching test (Goodrich and Boomer, 1963), a game-like test (Olson and Strauss, 1972), the Inventory of Marital Conflicts (IMC: Olson and Ryder, 1970) and identified problem areas. Many of the codes devised to objectify dyadic communication are based on systems theory (Murphy and Mendelson, 1973b; Rogers and Farace, 1975).

Behavioural investigators of dyadic communication have attempted to devise code categories which refer to objective behaviours which can be measured with the minimum of inference of the part of the observer. The most widely researched observational measures are the Marital Interaction Coding System (MICS: Weiss et al., 1973), and the Couples Interaction Scoring System (CISS: Gottman, Markman and Notarius, 1977). Both systems use either the IMC or identified *in vivo* problems as interactional stimuli. Interactions are videotaped and coded separately by two coders.

The MICS comprises 19 verbal code categories, such as Agree, Problem Solution and Criticize, and 11 nonverbal Speaker or Listener code categories, such as Attention, Positive Physical Contact and Turn Off.

Researchers have tended to collapse the code into two or more categories in order to simplify analysis. The CISS comprises eight content codes, each of which is further coded as having negative, positive or neutral affect depending upon face, voice and body cues. Listener affect is also coded.

The Marital Interaction Coding System as a Valid Instrument

Using the MICS, Weiss et al. (1973) reported that therapeutic intervention with five couples had the effect of increasing the rate of Compromise statements and decreasing the rate of Put Down, Disagree, and Problem Description statements. In addition, wives reduced their rates of Complaint and Criticize statements following treatment. In a second study of five different couples (Weiss et al., 1973), the MICS was collapsed into six categories: Problem Solving, Problem Description, Negative Verbal, Positive Verbal, Negative Nonverbal, Positive Nonverbal. For each category a highly significant change in the predicted direction was found.

All subsequent studies of therapeutic change using the MICS have employed similar collapsed categories. Following an analysis of the Weiss et al. (1973) data designed to identify those code components on which large magnitude changes were observed following treatment, Patterson et al. (1975) regrouped these code components under two category headings: Facilitating Behaviour and Disrupting Behaviour. Significant changes in the predicted direction were found in both categories for 10 distressed couples following treatment. Liberman et al. (1976) used six categories, but found significant differences in only three of them following marital therapy: Negative Verbal, Negative Nonverbal and Positive Nonverbal.

Collapsing the MICS components into Positive and Negative categories only, Jacobson (1977) reported significant improvements in a distressed group following therapy on both scores. No comparable changes were observed in the control group.

Using a multiple-baseline procedure, Bornstein, Bach, Heider and Ernst (1981) selected four target behaviours for each of two distressed couples. Target behaviours were based on MICS code components, and each behaviour was sequentially the focus of attention for two sessions. Multiple-baseline analysis of data from the coded interactions showed, for each couple, that behaviours such as Criticize, Agreement and Positive Problem Solving changed in appropriate ways only following the introduction of that phase of therapy explicitly designed to change that particular behaviour. A 1-year follow-up showed that gains had been maintained over all behaviours.

The above findings suggest that the MICS is sensitive to treatment effects. Other research suggests that the MICS is also sensitive to differences in communication style. The studies of Birchler et al. (1975) and Vincent et al. (1975) were based on the same sample of 12 distressed and 12 nondistressed couples. While Vincent et al. selected subsets of the code components *a priori* to derive two categories, Positive and Negative Statements, Birchler et al. derived three categories, Problem Solving, Positive Social Reinforcement and Negative Social Reinforcement. Using a modification of Olson and Ryder's (1970) Inventory of Marital Conflicts (IMC), Birchler et al. (1975) found that relative to nondistressed couples, distressed couples emitted significantly more Negative Social Reinforcement, and significantly less Positive Social Reinforcement in a problem-solving situation. Similarly, Vincent et al. (1975) found that distressed couples made significantly more Negative Statements, and significantly fewer Positive Statements.

When interacting with strangers, however, there were no significant differences between distressed and nondistressed couples.

Further evidence of the validity of the MICS comes from a study by Royce and Weiss (1975) in which non-professional judges viewed videotaped samples of marital interaction, rated couple satisfaction, and noted the behavioural cues which determined the rating given. Five of the behaviours which the judges found most useful in predicting satisfaction ratings overlapped with the MICS categories: Attention, Compromise, Agree, Laugh, Humour.

Weider and Weiss (1980) investigated the generalizability of taped marital interaction across occasions using the MICS and found that most of the variation in the coded samples of the 14 distressed couples was due to differences among couples and to cross situational differences within couples. There was no evidence of observer drift, coder biases across couples or occasions, or subject reactivity from first to second sampling occasion. Despite the discussion of different topics, and sampling on two different occasions, the couples' negative behaviour, but not positive behaviour, remained relatively constant.

Five video samples identified individual couples with from 83 to 94 percent accuracy, while five audio samples identified individual couples with from 76 to 90 percent accuracy. A study by Cohen and Christensen (1980) supports the concept of communication consistency. Married couples engaged in discussing their own problems were not able to alter their communication responses as directed by the experimenter. Communication behaviours were assessed using an audiotape version of the MICS (Margolin, 1978).

Collectively, the above findings provide strong evidence that the MICS is a highly valid instrument. This evidence is based primarily upon the investigation of frequency counts of monadic variables. Dyadic variables of couple interaction have, however, been found to be more highly related to the level of marital satisfaction than monadic variables (Speer, 1972). Unlike the MICS, the Couples Interaction Scoring System (CISS) has been used primarily to investigate sequences of interaction events.

Sequential Analysis of Marital Interaction

Using the CISS, Gottman et al. (1977) analyzed data from 14 distressed and 14 nondistressed couples to include both sequences and simple frequency counts. Sequential analyses of both content and affect components taken together indicated that distressed and nondistressed couples do not simply differ in their response frequency, but that their interactions are essentially different, and that negative cycles are more likely to occur with distressed couples. Both groups of couples were more likely at all lags to reciprocate negative affect than positive affect, with distressed couples showing the greater tendency to reciprocate negative affect.

Gottman (1980) sequentially analyzed data from 19 distressed couples and 19 nondistressed couples across high and low conflict tasks, and found that consistency on the dimension of negative affect reciprocity is clearly greater than for the positive dimension. Gottman and his colleagues use the concept of reicprocity narrowly, in the sense of an immediate temporal reciprocity, and have shown negative affect and negative affect reciprocity to be robust properties of relationships. Gottman (1980) discussed the supporting evidence, based on correlated galvanic skin responses, for the notion that negative

affect creates a temporal physiological linkage between interacting people, whereas positive affect does not. While evidence supporting the concept of negative affect reciprocity may be strong, evidence for the discriminating power of temporal reciprocity is not (Gottman, Notarius, Markman, Bank, Yoppi, and Robbin, 1976; Gottman et al., (1977) Only Gottman (1979, cited in Gottman, 1980) reported that negative affect temporal reciprocity has been found to descriminate distressed from nondistressed couples.

Two studies have involved sequential analyses of MICS data. Margolin (1977) investigated data from 27 distressed couples and found some evidence for temporal reciprocity of Negative Verbal behaviour. The best response predictor, however, was the base rate of a particular behaviour. When multiple lags were investigated with Put Down as the criterion variable, it was found that, once begun, a negative cycle was likely to continue for several sequences. This finding supports the theoretical concept of escalation, and suggests that communication sequences, rather than isolated behaviours, should be the target of communication training. Further supporting evidence for the concept of escalation within distressed relationships comes from a study which analyzed multiple lags using 10 distressed and 10 nondistressed couples (Revenstorf, Vogel, Wegener, Hahlweg, and Schindler, 1980).

EVIDENCE FOR A COGNITIVE-BEHAVIOURAL COMPONENT OF MARITAL SATISFACTION

Observational codes generally assign units of behaviour to specific categories, and these categories have been created *a priori* by investigators. Although communication skills as reported by trained observers have repeatedly been shown to discriminate between distressed and nondistressed couples, nonsignificant correlations were found between couples' subjective satisfaction scores as measured by the MAT and communication style as measured by the MICS.

Margolin (1978) found correlations with MAT scores of r = .02 for Positive behaviours and r = .01 for Negative behaviours. This finding is similar to that reported by Robinson and Price (1976). Thus unweighted frequency counts of overt behaviours as measured by both the MICS and the SOC have been shown to be nonsignificantly correlated with measures of marital satisfaction.

Koren et al. (1980) analyzed audiotapes of 30 distressed and 30 nondistressed couples and found that distressed couples were more critical of and less responsive to each other than were nondistressed couples. These two behaviours emerged from regression analyses as important predictors of conflict resolution, and of outcome satisfaction. When the marital distress measure was added to the regression analyses, it eclipsed the variance accounted for by Criticism and Responsiveness in both equations. This suggests a circular effect with behaviour influencing marital satisfaction and marital satisfaction influencing behaviour. This formulation is in line with current learning theory models (e.g. Bandura, 1977a), and indicates the desirability of investigating cognitions about behaviours as well as the behaviours themselves.

The technology necessary to investigate cognitions about ongoing communication is available. Electromechanical recording and cueing devices have been used in the training of couples (Carter and Thomas, 1973; Katz, 1974; Margolin and Weiss, 1977; Stuart 1970; Thomas, Carter and Gambrill, 1971). Using these devices individuals are able to track and attempt to modify spouse behaviours. It would be enlightening to compare the relative usefulness of spouse tracking and observer tracking of dyadic cumminication in the prediction of marital satisfaction.

A significant difference in the direction of spouse tracking would be strong evidence for a cognitive as well as a behavioural component of marital distress.

Evidence for a cognitive component would provide an improved rationale for communication skills training. Not only would it be appropriate to modify spouse behaviours, but it would often be appropriate to modify partners' cognitions about spouse behaviour. Supporting evidence for a cognitive component of marital distress has been reported by Gottman et al. (1976). Fifteen distressed and 15 nondistressed couples were asked to rate the intent and impact of messages on a 5-point scale. Analysis of the interactions showed that the behaviour of distressed spouses was received more negatively by partners than was the behaviour of nondistressed spouses. There was no significant difference in the intention of distressed and nondistressed couples. These results support the earlier findings of Kahn (1970).

It has been shown that distressed and nondistressed couples can be discriminated on the basis of behaviour exchange, number of conflict areas, shared activity, frequency counts of positive and negative communications, and sequential analysis of ongoing interaction. Supporting evidence for the concepts of reciprocity, avoidance behaviour, negative problem-solving strategies, and escalation of conflict have been found. Nevertheless, *Pleases* and *Displeases* combine to predict only approximately 25 percent of marital satisfaction variance, and the well researched MICS has been shown to correlate nonsignificantly with the MAT. There is some evidence that a cognitive component must be taken into account both in practice and theory. From a behavioural perspective this cognitive component must be based on prior learning. If this is so, it follows that a behavioural theory of marriage cannot ignore the cognitive set which is brought into marriage and through which all spouse behaviours are interpreted.

AIMS

The aims of Study 1 were.

1. To attempt to replicate some of the previous findings regarding the differences between distressed and nondistressed couples using a New Zealand sample.

2. To investigate the relative usefulness of behavioural-based measures of marital distress, taking into account less well researched measures such as the ACQ and IRA.

3. To investigate the relationship between developmental factors and marital satisfaction. The evidence that distressed couples behave differently with spouses than with strangers has lead to the assumption that marital distress is a "state" rather than "trait" syndrome. It may be, however, that distress within close relationships is more appropriately thought of as a "trait" syndrome and is closely related to the cognitive set which is taken into the marriage.

4. To further investigate sex differences in marital behaviours.

METHODS

Measures

1. Marital Prediction Test (MPT). The Marital Prediction Test (Locke and Wallace, 1959), is a 35-item multiple choice test relating to experiences before marriage, and to personality characteristics. The first 20 questions ask for information relating to demographic variables and personal relationships, particularly with parents. The final 15 items ask such questions as "Do you often feel lonesome, even when you are with other people?", "Are you considered critical of other people?". One minor change was made to the original questionnaire. "Before marriage what was your general attitude toward sex?" was changed to "What was your general attitude toward sex?".

The questionnaire was included in order to investigate the relationship between marital satisfaction and developmental factors.

2. Marital Adjustment Test (MAT). The Marital Adjustment Test (Locke and Wallace, 1959) is a 15-item test which provides a measure of marital satisfaction. It is a widely used standardized scale which assesses the amount of agreement between spouses in regard to demonstrations of affection, family finances and leisure time activities, for example. In addition, individuals are asked to rate their marriage on a 7-point continuum that ranges from Very Unhappy to Perfectly Happy. One minor change was made to the original questionnaire. The two possible answers to the question, "In leisure time do you prefer to ...?" were, "be on the go with spouse" or, "stay home". A third choice, "be on the go with others" was added. The questionnaire was included since it is widely used by various schools of marital therapy, and MAT scores have come to represent a descriptive statement.

3. Areas of Change Questionnaire (ACQ). The Areas of Change Questionnaire (Patterson, 1976b) is a 34-item inventory of specific relationship behaviours that assesses on a 7-point scale, ranging from 'much more' to 'much less', the degree of conflict regarding desired behaviour change in potential problem areas such as showing appreciation and expression of emotions. The same items are responded to in each of two modes, e.g.: "I want my spouse to spend time with the children" and "It would please my spouse if I spent time with the children". A conflict score for the couple is derived by summing the items scored in either mode. One of the partners must score the item at least plus or minus two before that item counts toward the conflict score. Alternatively, if the same item is scored 'plus one' by one spouse and 'minus one' by the other, that item is scored as a conflict.

The possible total couple score is 68. This questionnaire was included as a theoretically-based behavioural measure which has not been as extensively investigated as have the SOC and MICS.

4. Inventory of Rewarding Activities (IRA). This measure is based on the Marital Activities Inventory (Weiss et al., 1973). The original inventory consisted of a list of 84 recreational activities and was used to measure the frequency with which recreational events took place, and with whom they were shared. The inventory was redesigned and expanded to 100 items by Weiss, and was renamed the Inventory of Rewarding Activities. As used in the present study, the IRA provides a measure of how individuals distribute their recreational activities over a four-week period.

One hundred different kinds of activities are appropriately checked as having been done alone, with spouse, as a family activity, with spouse and other adults, or with any others excluding spouse. The range of activities rather than frequency is assessed. Individual items were changed in order to better reflect New Zealand culture and idiom. Several scores can be derived from the Inventory. The present study makes use of the following scores: (a) the number of activities engaged in with spouse only, i.e. Activities Spouse (Act. Sp), (b) the number of activities engaged in with spouse and any other person, i.e. Spouse-Related Activities (Act S-R), (c) the total number of activities engaged in, i.e. Total Activities (Act T), (d) the proportion of activities engaged in with spouse only, i.e. Proportion Activities Spouse (Prop Sp), and, (e) the proportion of spouse-related activities, i.e. Proportion Spouse-Related Activities (Prop S-R). Respondents were specifically asked not to collaborate on this questionnaire and the correlations between husband and wife scores on (a) and (b) were used to provide a measure of reliability for the

Inventory. The IRA was included as another theoretically-based behavioural measure which has not been extensively investigated. In particular its sensitivity to changes following therapy has not been established.

5. Current Time Distribution (CTD). This questionnaire constitutes part of the revised Inventory of Rewarding Activities (Birchler, 1975). It has, however, been modified by the present author to provide additional information and has been used as a separate questionnaire. It provides a measure of how time is distributed over a 7-day period. Twenty-four hour periods are divided into hours spent at work, in sleep, in rewarding time with spouse, in rewarding time without spouse, and in neutral time. Several scores can be derived from the measure. The present study makes use of the following scores: (a) rewarding time spent with spouse i.e. Rewarding Time Spouse (RTS), (b) rewarding time spent without spouse i.e. Rewarding Time Without Spouse (RTO), (c) the proportion of rewarding time spent with spouse (a/a+b), i.e. Proportion Rewarding Time Spouse (Prop RTS). The CTD was included as a further potential measure of spouse-avoidance.

6. Spouse Observation Checklist (SOC). The Spouse Observation Checklist (Patterson, 1976b) is a client administered observational procedure designed to measure the number of events classified as *Pleases* and *Displeases* exchanged between spouses in their natural environment over a 7-day period. The checklist comprises over 200 discrete behaviours. *Pleases* are defined as events which make life easier, which involve highly valued spouse activities, or which involve actions

considered necessary to the role of a good partner. *Displeases* are defined as events which are annoying, which make life more difficult, or which are not considered appropriate to the role of a good partner. Areas of marital interaction for which examples are provided include money management, decision-making, household chores, leisure time, childcare, demonstrations of affection.

Subjects are asked to record only those events which they themselves experience as pleasing or displeasing. Wrist counters are provided for this purpose. At the end of each day total *Pleases* and *Displeases* are recorded on a chart, together with an estimate of the amount of time spent together. Several scores can be derived from this measure. The present study makes use of the following scores: (a) the number of *Pleases* per hour, i.e. the Please Rate (P-rate), (b) the number of *Displeases* per hour, i.e. the Displease Rate (D-rate), (c) the proportion of *Pleases* (pleases/pleases + displeases), i.e. Proportion Pleases (Prop P). The SOC also provides data necessary for the investigation of reciprocity.

As currently used, the measure represents a method of counting the frequency of phenomenological events rather than spouse behaviours as described on the Checklist. The measure was included in this form because the author assumed that the impact of one person's behaviour upon another constitutes the reinforcing or punishing elements of that behaviour, and is, therefore, highly relevant to behavioural theory and practice. The marital dyad can be thought of as a system, with each spouse having the ability to track their own responses to partner's behaviour more accurately than they can recall partner's behaviour over a 24-hour period.

7. Marital Interaction Coding System (MICS). The Marital Interaction Coding System (Weiss et al., 1973) is a procedure for coding videotaped samples of husband-wife interaction in the laboratory setting. For the purposes of the present study, 10-minute samples of interaction were videotaped. The couples are asked to discuss an issue relevant to their relationship with the aim of trying to reach a decision about it. The couple is first given time and assistance to find a suitable topic, and is then left alone in the room while the ensuing discussion is videotaped.

The videotapes are coded by two observers. As used by the author, the MICS has been reduced from 30 to 24 categories. Categories found to have a very low frequency of occurrence during the pilot study were omitted from the analysis. Birchler et al. (1975) also eliminated low frequency categories. Behaviours are classified according to the following categories:

Agree
Approval
Accept Responsibility
Assent
Attention
Complain
Criticize
Compromise
Disagree
Deny Responsibility
Humour
Interrupt
Laugh/Smile
No Response
Negative Solution
Normative
Not Tracking
Problem Description
Positive Physical Contact
Positive Solution
Put Down
Question
Talk
Turn Off

MICS observers were research assistants trained on specially prepared tapes until they reached a minimum of 70 per cent interrater reliability over a 10-minute segment. The same two observers, blind to the experimental condition, coded all interactions. All interactions were further coded by the author to check for coder drift (Taplin and Reid, 1973), and periodic refresher training was scheduled for the coders.

Data are recoded sequentially from the taped interaction in 30-second intervals, focusing first on the speaker and then on the listener, thus providing a detailed accounting of the communication processes and the ongoing pattern in which they occurred. To calculate percentage of agreement between the two observers, coders alternate as "coder" and "reader". The total frequency of codes recorded by the "reader" is divided into the number of agreements with the "coder". The mean interrater reliability score for all coded samples was 95.5, range .71 to 1.00. The measure was included in preference to the CISS because it has been more widely adopted by other investigators, and more comprehensively researched.

Table 2.1

The battery of measures as administered to 20 distressed and 20 undistressed couples

1.	Marital Prediction Test (MPT)	
	score:	MPT
2.	Marital Adjustment Test (MAT)	
	score:	MAT
3.	Areas of Change Questionnaire (ACQ)	
	score:	ACQ
4.	Inventory of Rewarding Activities (IRA)	
	scores:	Activities Spouse (Act Sp)
		Spouse-Related Activities (Act S-R)
		Total Activities (Act T)
		Proportion Activities Spouse (Prop Sp)
		Proportion Spouse-Related Activities (Prop S-R)
5.	Current Time Distribution (CTD)	
	scores:	Rewarding Time Spouse (RTS)
		Rewarding Time Without Spouse (RTO)
		Proportion Rewarding Time Spouse (Prop RTS)
6.	Spouse Observation Checklist (SOC)	
	scores:	Please Rate (P-rate)
		Displease Rate (D-rate)
		Proportion Pleases (Prop P)
7.	Marital Interaction Coding System (MICS)	
	scores:	Positive Verbal (PV)
		Positive Nonverbal (PNV)
		Problem Solving (PS)
		Total Positive (TP)
		Negative Verbal (NV)
		Negative Nonverbal (NNV)
		Total Negative (TN)

Subjects

Twenty distressed couples were recruited for the comparative study, Study 1. They were recruited from couples who had requested assistance either from local helping agencies or from the Canterbury Relationship Enhancement and Social Skills Training (CRESST) programme. Some couples wishing to be included in the CRESST programme could not be accommodated, and were persuaded to provide data for the comparative study in return for a full assessment, limited therapy using videotaped feedback, and a copy of the book *Communication for Couples* (Gottman, Notarius, Gonzo, and Markman, 1976).

Some couples who were already receiving assistance from other agencies were offered a reduction in fees in return for data. Another group of couples who had requested assistance from a local agency were given communication skills training by the author on behalf of the agency in return for data. An effort was made to provide all distressed couples volunteering for this part of the study with some therapeutic assistance. The only criterion for inclusion in the Distressed group was that both partners were dissatisfied with their relationship.

Twenty nondistressed couples were also recruited. These couples were recruited from within the local community by means of media messages, and by contacting social organizations. All advertising specified the need for "happy" couples, and nothing was offered in return for data. The only criterion for inclusion in the Nondistressed group was that both partners were satisfied with their relationship.

Procedure

Couples volunteering for the research were seen individually at the University of Canterbury, Department of Psychology by the author following an initial telephone interview. Ninety-minute appointments were scheduled for each couple. The author first ascertained that both husband and wife defined their relationship as either satisfactory or unsatisfactory, and then explained the relevance of that part of the research to the experimental studies which were to follow.

Couples were asked to fill out the MPT, MAT, ACQ and IRA without collaboration. The author remained with each couple while these questionnaires were completed. An identifying number was written on each questionnaire, before questionnaires were dropped into a box, the same number was written on the SOC and the CTD, and couples were asked to collect this data at home over a 7-day period as soon as possible.

Wrist counters were provided for the collection of *Please* and *Displease* data. Written instructions on the completion of these home observations were provided, and the author read these aloud and queried the couples' understanding of them. A stamped addressed envelope was provided for the return of the two 7-day records and wrist counters.

Finally, couples were asked to decide upon a topic for discussion. Because of the difficulty in generating suitable interactional stimuli for nondistressed couples, the Inventory of Marital Conflicts has often been used. In order that couples could discuss personally relevant material, however, they were asked for a sample of decision-making behaviour. Topics did not have to be contentions, but if they could not be related to decision-making they were ruled out. Once the couple had chosen a topic for discussion they were left alone and a 10-minute interaction was videotaped. Nondistressed couples were seen only once. Most of the distressed couples were seen again following data collection.

RESULTS

Demographic Characteristics

The two groups were very similar on major demographic characteristics as shown in Table 2.2. Socioeconomic status was similar for both groups. The majority of the men were in skilled occupations, while the majority of women either worked at home or in part-time paid employment.

Table 2.2

Demographic characteristics of the distressed and non-distressed husbands and wives.

Characteristic		Distressed Wives (n=20)	Distressed Husbands (n=20)	Nondistressed Wives (n=20)	Nondistressed Husbands (n=20)
Age (years)	$\bar{x}$	33.7	36.5	31.0	35.4
	S.D.	7.6	8.3	7.2	8.3
Formal education (years)	$\bar{x}$	12.5	12.2	12.8	13.6
	S.D.	2.2	1.9	1.9	2.4
Duration of marriage (years)	$\bar{x}$	10.4		7.7	
	S.D.	7.0		6.7	
Number of children	$\bar{x}$	2.3		2.0	
	S.D.	1.6		1.3	

A multivariate analysis of variance (MANOVA: University of North Carolina, 1967) performed on the demographic variables showed that there were no significant differences between the two groups ($p < .12$), though the general trend was for distressed couples to be older, have been married longer and to have more children and less formal education.

Analyses of Group Differences

Table 2.3 shows the means and standard deviations for all self-report and quasi-observational measures. In general the scores of the Distressed and Nondistressed groups differ in the expected directions. Within the Distressed group there is a sex effect evident, the wives typically having scores more toward the distressed end of the continuum than do the husbands. This effect, is not evident in the Nondistressed group.

The IRA reveals the distressed couples to have overall fewer rewarding activities, and fewer such activities shared with their spouse,

Table 2.3

Means and standard deviations of scores on self-report and quasi-observational measures for distressed and nondistressed husbands and wives.

			Distressed		Nondistressed	
			Wives	Husbands	Wives	Husbands
MPT		$\bar{x}$	257.5	254.2	314.7	284.1
		S.D.	98.9	108.6	39.5	114.9
MAT		$\bar{x}$	59.1	70.7	129.2	123.1
		S.D.	26.0	23.6	11.1	15.1
ACQ		$\bar{x}$	27.5		4.0	
		S.D.	9.5		4.3	
IRA	Act T	$\bar{x}$	60.5	50.2	71.6	78.1
		S.D.	22.8	19.1	20.3	18.2
	Act Sp	$\bar{x}$	15.4	15.5	26.6	27.3
		S.D.	9.9	7.0	10.8	8.6
	Act S-R	$\bar{x}$	28.8	29.6	46.3	50.2
		S.D.	15.7	15.4	14.5	12.5
	Prop Sp	$\bar{x}$	.25	.31	.37	.36
		S.D.	.12	.10	.10	.10
	Prop S-R	$\bar{x}$	.46	.57	.65	.64
		S.D.	.15	.14	.07	.07
CTD	RTS (hours)	$\bar{x}$	1.62	2.39	3.65	3.70
		S.D.	1.51	1.50	1.48	1.41
	RTO (hours)	$\bar{x}$	1.67	1.54	1.83	1.74
		S.D.	1.51	1.18	0.97	0.94
	Prop RTS	$\bar{x}$	.44	.52	.63	.65
		S.D.	.32	.28	.19	.19
SOC	Please Rate	$\bar{x}$	0.54	0.65	1.43	1.18
		S.D.	0.48	0.58	1.08	0.93
	Displease Rate	$\bar{x}$	0.50	0.51	0.31	0.28
		S.D.	0.48	0.41	0.25	0.21
	Proportion Pleases	$\bar{x}$	.43	.47	.78	.76
		S.D.	.25	.26	.20	.20

and the pattern of results from the CTD measure is consistent with this. The nondistressed couples experience more *Pleases* per hour, and fewer displeases per hour than do the distressed couples. In general, the variability of the data is lower for the Nondistressed than for the Distressed group.

The reliability of these observations was checked for the IRA by examining the husband and wife scores for Activities Spouse, and Spouse-Related Activities. The correlations were .80 and .75 respectively, suggesting a satisfactory degree of reliability of the clients observations.

Two multivariate analyses were undertaken, one to compare the Distressed and Nondistressed groups on all measures listed in Table 2.3, and the other within the Distressed group to examine the sex effect. When all variables were considered simultaneously, the Distressed group was significantly different from the Nondistressed group ($F(14,63) = 21.76$, $p < .001$). Significant univariate differences were found on all measures except Rewarding Time Without Spouse (RTO), with the criterion set at $p < .05$. When the scores for husbands and wives within the Distressed group were compared, a significant sex effect was found ($p < .05$). One univariate contrast was significant. Husbands reported a significantly higher Proportion Spouse-Related Activities than did wives.

Discriminant Function and Regression Analyses

In order to answer the question "Which of the self-report and quasi-observational measures best discriminated distressed from nondistressed individuals?" a step-wise discriminant analysis was performed using the 14 variables shown in Table 2.3.

The F to enter and F to remove were both set at the .50 level of probability, and variables were ordered on the basis of their minimization of Wilk's lambda. Results of this analysis suggested that six variables reliably discriminated the two groups (multivariate $F(6,61) = 53.59$, $p < .001$). These variables, listed in order of their standardized canonical discriminant function were: ACQ, Displease Rate, Proportion Pleases, Rewarding Time Spouse, MAT and Please Rate. The six variables correctly classified 100% of both groups.

It is possible that the usefulness of measures in discriminating distressed from nondistressed relationships depends on whether it is a man or a woman who is supplying the data. In order to test this, two further stepwise discriminant function analyses were carried out, one on the husbands' data, the other on the wives' data. Six variables, the ACQ, Proportion Pleases, Proportion Rewarding Time Spouse, Displease Rate, Please Rate and Rewarding Time Without Spouse reliably discriminated the two groups of husbands (multivariate $F(6,26) = 30.87$, $p < .001$). The six variables correctly classified 100% of both groups. Five variables, ACQ, MAT, Rewarding Time Without Spouse, Displease Rate and Proportion Activities Spouse reliably discriminated the two groups of wives ($F(5,29) = 33,77$, $p < .0001$). The five variables correctly classified 100% of the distressed wives and 95% of the nondistressed wives. Results of the three discriminant analyses are shown in Table 2.4.

The ACQ and the Displease Rate emerge from these discriminant analyses as the two variables which consistently discriminate distressed from nondistressed couples. In all cases the ACQ has the highest discriminant function coefficient and hence the greatest discriminative power.

Table 2.4

Stepwise discriminant analyses of measures of marital distress for distressed and nondistressed husbands plus wives, husbands only and wives only.

Husands + Wives		Husbands Only		Wives Only	
Measure	Standardized Canonical Discriminant Function Coefficient	Measure	Standardized Canonical Discriminant Function Coefficient	Measure	Standardized Canonical Discriminant Function Coefficient
ACQ	0.9197	ACQ	1.3506	ACQ	0.8825
D-rate	0.5641	Prop P	1.0930	MAT	-0.5235
Prop P	0.3730	Prop RTS	-1.0763	RTO	-0.4225
RTS	-0.2784	D-rate	1.0586	D-rate	0.3646
MAT	-0.2563	P-rate	-0.5264	Prop S-R	0.3031
P-rate	-0.2248	RTO	-4673		
100% of cases correctly classified		100% of cases correctly classified		97.5% of cases correctly classified	
$P < .0001$					

Since the MAT has been widely used as a research and diagnostic tool, a further examination was made of the relationship between MAT scores and the other variables. A hierachial regression analysis was performed with the MAT score serving as the criterion variable (range 26-148) and four proposed components of marital satisfaction serving as predictor variables. The order in which the predictor variables entered, based upon behavioural theory, was (1) Please Rate, (2) Displease Rate, (3) ACQ, (4) Proportion Spouse-Related Activities. When the Please Rate and Displease Rate entered the regression analysis on Steps 1 and 2, they predicted 41% of the variance in marital satisfaction.

This result is comparable to previous findings regarding the contribution of *Pleases* and *Displeases* to the prediction of marital satisfaction (Wills et al., 1974; Jacobson et al., 1980). When a stepwise regression analysis was performed on the same four predictor variables, however, ACQ entered first, and alone predicted 72% of the variance. The four predictor variables representing measures of reciprocity, unresolved conflict and avoidance behaviour together explained 81.8% of the variance.

A further stepwise regression analysis was performed, again with the MAT score serving as the criterion variable and with 13 predictor variables, only 11 of which entered the regression equation. Results are shown in Table 2.5.

Table 2.5

Stepwise regression analysis of proposed components of marital satisfaction on the MAT

Variable	R	R^2	R^2 change	Zero-order r
ACQ	.848	.720	.720 *	-.85
Prop P	.882	.779	.059 *	.75
D-rate	.889	.791	.012 **	-.39
Prop S-R	.900	.809	.018 **	.55
P-rate	.905	.818	.009 **	.40
Act S-R	.907	.822	.004	.48
Act	.907	.823	.001	.30
Act Sp	.908	.824	.001	.51
MPT	.908	.825	.001	.23
Prop Sp	.908	.825	.000	.47
Prop RTS	.908	.825	.000	.30

* $p < .01$ ** $p < .05$

The first five variables in the equation accounted for 82.2% of the variance. Adding more variables did not result in improved prediction. In accounting for 6% of the variance, Proportion Pleases usurped both Displease Rate and Please Rate.

In order to determine whether or not husbands and wives reported differences in predictors of marital satisfaction, two further stepwise regression analyses were performed with the MAT score serving as the criterion variable, and with 13 predictor variables. For husbands, 12 variables accounted for 79% of the variance, with ACQ accounting for 65% and Displease Rate adding another 7.2%. Please Rate and Proportion Pleases added nothing to the percentage of variance accounted for. For wives, 12 variables explained 92% of the variance with ACQ explaining 79.3% and Proportion Pleases adding another 6.4%. Three variables relating to shared activity added a further 4.1%.

The ACQ emerges from these regression analyses as the variable which consistently adds a dramatic increment to the prediction of the criterion. In all cases the ACQ has the highest beta weight. The separate analyses performed on husband and wife data suggests that there are sex differences in the relative importance of pleasing and displeasing events.

Item Analysis of the Areas of Change Questionnaire

Since the ACQ had emerged as such a powerful discriminator and predictor, an item analysis was performed on it in order to investigate the frequency with which each item was endorsed by distressed and nondistressed couples. A conflict score of 0 to 12 was possible on each item. Table 2.6 shows the results of the frequency analysis. Ten areas of conflict for distressed and nondistressed couples are shown in order of importance along with group means for each item.

Crosstabulation analyses on each item showed that with the exception of "Accept praise" distressed and nondistressed couples scored significantly differently on each item.

Table 2.6

Ten areas of conflict reported by distressed and nondistressed couples in order of importance.

	Distressed Couples		Nondistressed Couples	
Order of Importance	Item	Mean Score	Item	Mean Score
1	Express Emotions	6.65*	Express Emotions	3.25*
2	Argue with me	5.85*	Give appreciation	2.45*
3	Give me attention	5.6*	Give me attention	2.2*
4	Give appreciation	5.5*	Keep house clean	2.15***
5	Sexual needs	5.15*	Start interesting conversations	2.15*
6	Start interesting conversation	4.85*	Go out with me	2.1*
7	Spend time with me	4.85*	Plan free time	2.0**
8	Go out with me	4.75*	Sexual needs	2.0*
9	Plan free time	4.75**	Spend time with me	1.9*
10	Keep house clean	3.8***	Accept praise	1.65

* $p < .0001$ ** $p < .0005$ *** $p < .05$

The items relating to expression of emotion and the provision of appreciation and attention emerge as among the most important for both distressed and nondistressed couples.

Nine of the eleven items shown in Table 2.5 appear in both lists. Both groups report having the same types of problems but with different frequencies and intensity.

Reciprocity Data

In order to investigate reciprocity within the relationships, the correlations between partners reported number of *Pleases* and *Displeases* was calculated. Within-couple correlations showed that, in the short term, mean reciprocity of *Pleases* and *Displeases* was essentially the same for distressed and nondistressed couples. For distressed couples, the mean correlation of *Pleases* was r = 0.51 (range r = -.46 to .92), and of *Displeases*, r = .34 (range r = -.33 to r = .98). For nondistressed couples, the mean correlation of *Pleases* was r = .46 (range r = -.59 to r = .98), and of *Displeases*, r = .37 (range r = -.37 to r = .88).

Between-couples correlations showed that, in the longer term (seven days), reciprocity of *Displeases* was essentially the same for both groups, r = .89 for distressed couples and r = .83 for nondistressed couples. Reciprocity of Pleases was r = .79 for distressed couples and r = .92 for nondistressed couples. This is indicative of reduced reciprocity of *Pleases* by the distressed group. The total ratio of *Pleases* to *Displeases* was 1.3:1 for the distressed couples, but was 5:1 for the nondistressed couples.

Discriminant Function Analysis of Developmental Variables

In order to answer the question "Which developmental factors best discriminate distressed from nondistressed individuals?" a stepwise discriminant analysis (maximum 12 steps) was performed with the 35 questions which constitute the MPT as discriminator variables.

The F to enter and F to remove were both set at the .50 level of probability, and variables were ordered on the basis of their minimization of Wilks' Lamda. Results of this analysis suggested that 12 variables reliably discriminated the two groups (multivariate $F\ (12,63) = 5.02$, $p < .0001$). These variables, listed in order of their standardized canonical discriminant function coefficients are shown in Table 2.7. The 12 variables correctly classified 86.8% of the distressed group and 78.9% of the nondistressed group.

In order to determine whether or not different variables are most useful in discriminating groups of wives and groups of husbands, two further stepwise discriminant analyses were performed. Twelve variables reliably discriminated distressed husbands from nondistressed husbands (multivariate $F\ (12,24) = 5.084$, $p < .0005$). These variables, listed in order of their standardized canonical discriminant function coefficients are shown in Table 2.7. The 12 variables correctly classified 89.5% of the Distressed group and 100% of the Nondistressed group. Ten variables reliably discriminated distressed wives from nondistressed wives (multivariate $F\ (10,27) = 5.42$, $p < .0002$). These variables, listed in order of their standardized canonical discriminant function coefficients are shown in Table 2.7. The 10 variables correctly classified 89.5% of the Distressed group and 94.7% of the Nondistressed group.

The items which emerge as being common to all three analyses are (1) often feels miserable, (2) attachment to mother, (3) discipline as a child, (4) attendance at Sunday School. As a personality variable "Often feels miserable" might be both a casual factor and an effect of marital distress. It can be seen, however, from the standardized coefficients that it is a powerful discriminator variable for wives, being relatively twice as important as "Attachment to mother".

Wives reported only two discriminator variables pertaining to relationships within the family of origin: (1) Attachment to mother, (2) Discipline as a child. Husbands reported five such family relationship discriminator variables: (1) Conflict with mother, (2) Attachment to mother, (3) Conflict with father, (4) Discipline as a child, (5) Happiness of parents' marriage. Another relationship variable reported in the husbands' discriminant function is "Number of friends before marriage". Two personality variables which relate to social relationships (1) Feelings of loneliness, (2) Prefer to be alone when upset, were also reported as discriminator variables by husbands.

Table 2.7

Stepwise discriminant analyses of the 35-item Marital Prediction Test

Husbands and Wives		Husbands Only		Wives Only	
Variable	Standardized Canonical Discriminant Function Coefficient	Variable	Standardized Canonical Discriminant Function Coefficient	Variable	Standardized Canonical Discriminant Function Coefficient
Often feels miserable	1.5288	Conflict with mother	-0.9686	Often feels miserable	2.1904
Conflict with father	1.1037	Number of friends prior to marriage	-0.9495	Attachment to mother	1.0521
Attachment to mother	0.8496	Duration of dating	-0.9395	Religious activity prior to marriage	0.9606
Attachment to father	-0.7255	Often feels miserable	0.9221	Size of hometown	-0.9446
Conflict with mother	-0.6638	Attachment to mother	0.8447	Spouse's mental ability	-0.8604
Even tempered and happy	-0.6362	Feelings of loneliness	0.7940	Attendance at Sunday School	0.8507
Discipline as a child	-0.3984	Conflict with father	0.5993	Touchy about some things	0.8122
Prefer to be alone	0.3925	Discipline as a child	-0.5692	Even tempered and happy	-0.7537
Attendance at Sunday School	0.3741	Happiness of parents' marriage	0.4934	Self confident	-0.5045
Touchy about some things	0.3165	Attendance at Sunday School	0.3932	Discipline as a child	0.4630
Religious activity prior to marriage	0.2653	Mood swings	-0.3235		
Number of friends prior to marriage	-0.2257	Prefer to be alone when upset	0.1728		
82.9% of cases correctly identified ($p < .0001$)		94.6% of cases correctly identified ($p < .0005$)		92.1% of cases correctly identified ($p < .0002$)	

Behavioural Observations in the Laboratory

Table 2.8 shows the means and standard deviations for the seven scores derived from the MICS. The seven summary scores were derived by collapsing the 24-category code, and each score represents a number of summed code categories exchanged per minute. In general, the scores of the Distressed and Nondistressed groups differ in the expected directions.

Table 2.8

Means and standard deviations of seven scores derived from the MICS for distressed and nondistressed husbands and wives.

Number/min.		Distressed Wives	Distressed Husbands	Nondistressed Wives	Nondistressed Husbands
Positive Verbal	$\bar{x}$	0.35	0.56	0.59	0.72
	S.D.	0.34	0.37	0.38	0.56
Positive Nonverbal	$\bar{x}$	2.01	1.63	3.67	2.96
	S.D.	1.18	0.98	1.49	1.41
Problem Solving	$\bar{x}$	0.47	0.50	1.13	1.02
	S.D.	0.39	0.31	0.65	0.58
Total Positive	$\bar{x}$	2.83	2.69	5.39	4.70
	S.D.	1.53	1.13	1.43	1.32
Negative Verbal	$\bar{x}$	3.09	2.40	0.11	0.13
	S.D.	2.23	1.90	0.11	0.13
Negative Nonverbal	$\bar{x}$	0.94	1.13	0.23	0.57
	S.D.	0.61	0.60	0.34	0.66
Total Negative	$\bar{x}$	4.04	3.53	0.34	0.70
	S.D.	2.30	1.96	0.35	0.73

A multivariate analysis of variance was performed on the seven summary scores shown in Table 2.8. When all variables were considered simultaneously, the Distressed group was significantly different from the Nondistressed group, $F(7,66) = 14.03$ ($p < .001$). Significant univariate differences were found on Problem Solving, Positive Nonverbal,

Total Positive, Negative Verbal, Negative Nonverbal, and Total Negative with the criterion set at $p < .001$, and on Positive Verbal with the criterion set at $p < .05$. No significant Sex effect ($p < .12$) and no significant interactions ($p < .97$) were found.

In order to determine which of the 24 code categories best discriminated distressed from nondistressed individuals, a stepwise discriminant analysis was performed. The F to enter and F. to remove were both set at the .50 level of probability, and variables were ordered on the basis of their minimization of Wilk's lambda. Results of this analysis suggested that ten variables reliably discriminated the two groups (multivariate $F(10,65) = 22.39$, $(p < .001)$. These variables listed in order of their standardized canonical discriminant function were Problem Description, Talk, Accept Responsibility, Problem Solution, Question, Laugh/Smile, Interrupt, Turn Off, Deny Responsibility and Compromise. The ten variables correctly identified (94.7% of both groups).

The relationship between MAT scores and MICS variables was also investigated. A stepwise regression analysis was performed with the MAT score serving as the criterion variable and with the 24 code categories serving as predictor variables. Twenty-three of the variables entered the equation and predicted 33.7% of the variance. A further stepwise regression analysis was performed, again with the MAT score serving as the criterion variable and with the seven summary scores as predictor variables. Four of the variables, Negative Verbal, Total Negative, Problem Solving and Positive Verbal entered the equation and predicted 16.1% of the variance.

Correlations with the MAT were found to be $r = -.38$ $(p < .005)$ and $r = -.34$ $(p < .005)$ for Negative Verbal and Total Negative respectively and $r = .16$ (n.s.) and $r = .04$ (n.s.) for Problem Solving and Positive Verbal respectively.

These findings only partially support those reported earlier. Margolin (1978) found almost zero correlation between MAT and both positive and negative behaviours. The above results, however, suggest that the negative elements of communication are more highly related to marital satisfaction than are positive elements.

DISCUSSION

No significant group differences were found when a multivariate analysis of variance was performed on a cluster of demographic variables. Significant differences were found, however, when further multivariate analyses of variance were performed on the CRESST battery of measures and on the MICS summary scores. The measures used in this study were all developed in North America, some of them as long as 20 years ago. The results of this study show that these measures are able to discriminate distressed from nondistressed couples in a New Zealand urban sample, thus providing a demonstration of their temporal and cultural generality.

The traditional measure of marital adjustment, the MAT, was shown to discriminate, with the mean scores for the distressed couples being well below 100, and the scores for the nondistressed being above 100. In the original study (Locke and Wallace, 1954), 17 percent of the Distressed group and 96 percent of the Nondistressed group scores over 100. This compares with 13 percent of distressed and 97 percent of nondistressed couples in the present study. However, the MAT contributed less to the discriminant analyses than did the ACQ.

The ACQ clearly discriminated between Distressed and Nondistressed groups. A cut-off score of 12 was found, with one distressed and one nondistressed couple both reporting a score of 12.

The mean group scores obtained in the present study compared closely with those of 28.5 and 6.9 reported by Birchler and Webb (1977) for the Distressed and Nondistressed groups respectively.

The findings of the present study that of the self-report quasi-observational measures the ACQ was the most effective discriminator between distressed and nondistressed couples, and that it accounted for more than 70% of the variance in MAT scores are significant. By comparison, the measures derived from the SOC have generally been shown to predict approximately 25 percent of the variance, and the present study found that the commonly used MICS summary scores predicted only 16.1% of the variance. When the 24 individual code categories were used, however, 33.7% of the variance was predicted. While the ACQ has been less well investigated than have the SOC and the MICS, it may be clinically the most useful diagnostic measure in that it provides information of use not only in establishing some overall measure of the severity of marital distress but also specific information about problem areas for use in the formulation of intervention strategies. The capacity of the ACQ to discriminate distressed from nondistressed couples is consistent with a behavioural view of the etiology of marital distress which attributes it to the failure to resolve conflict because of an inadequate repertoire of conflict-resolution skills (Koren et al., 1980; Weiss, 1978).

The item analysis of the ACQ has further theoretical implications for behavioural marital therapy. Both nondistressed and distressed couples reported experiencing the same kinds of problems. The areas of concern are related primarily to psychosocial needs. While Birchler (1979) analyzed ACQ data somewhat differently, the five most important areas of conflict as reported by him are almost identical to the first five reported in the present study.

The implications are that virtually all individuals take into a relationship deficits in such behaviours as the appropriate expression of feelings, showing appreciation and providing attention. These are overt behaviours which, ideally, should be modelled for and practised by every individual long before that individual enters into marriage. Marital therapy can be thought of as a highly inefficient alternative to parent training or social education.

After the ACQ, it is those measures derived from the SOC which seem to most consistently contribute to the discrimination between distressed and nondistressed couples. These measures were the Please Rate, the Displease Rate and the Proportion Pleases. The Please Rate was found to be higher for nondistressed couples and the Displease Rate was higher for the Distressed group. Such differences are also predicted by behavioural theories of marriage. Stuart (1969a), for example, identifies the failure of partners to exchange a sufficiently high number of positive relative to negative reinforcers as a crucial component of marital breakdown. The reciprocity data reported in the present study support this position. They do not, however, support previous findings which suggest that distressed couples reciprocate *Displeases* at a higher rate than do nondistressed couples.

As used in the present study, the SOC data comprised two frequency counts of phenomenological events. Nevertheless, results of the hierachical regression analysis, and the reciprocity data are similar to previous results based on what was thought to be an objective measure. This finding supports the argument that the SOC provides information about subjective perception of marital interaction rather than objective and reliable data.

While the inter-observer reliability of the measure may be unacceptably low, this kind of reliability may be quite inappropriate for what appears to be a theoretically and clinically valid measure. Its use in the clinical setting can probably be simplified to the point where individuals record pinpointed spouse behaviours which they experience as pleasing or displeasing as they occur. In discussing these later, the therapist learns as much about the observer's interpretation as he or she learns about the observed spouse behaviour.

Behavioural theories of marriage have also stressed the contribution to distress made by the development of coercive behaviour change strategies by one or both partners. A predicted consequence of the development of coercive strategies is the development of avoidance behaviours, which in turn leads to couples spending less time together, exchanging fewer rewards during the time spent together, and spending more of their rewarding time with others rather than with their partner. Differences of this kind should be evident in measures derived from the IRA and the CTD. While these measures were not found to consistently contribute to the multivariate discrimination between groups, the main differences were in the predicted directions.

It was observed that young couples, even though highly distressed, rarely displayed avoidance behaviour, and it was assumed that avoidance behaviour evolved more slowly than other components of marital distress. Using the number of Activities with Spouse Only as a measure of avoidance behaviour, Activity Spouse scores were correlated with number of years married. For nondistressed couples the correlation was $r = -.48$ and for distressed couples the correlation was $r = -.58$. Results were in the expected direction.

While laboratory observations were shown to reliably discriminate between distressed and nondistressed couples, overt behaviours as created *a priori* by investigators and identified by independent coders were less able to predict variance in the MAT score than was the ACQ. The relationship between laboratory observations by independent coders and the intent of and impact upon interacting partners remains to be investigated.

Within a clinical setting, it is probable that videotaped interactions would be most useful as phenomenological measures, with individuals identifying their own rewards and punishers. In working with one couple to identify a communication problem using videotape feedback, it became apparent to the author that the husband's drop in voice volume signified,to him, a demonstration of sincerity, while to the wife it signified that her husband was lying. Once this particular miscommunication had been identified, the couple made excellent progress. Obviously, no observer code could discriminate such nuances of communication.

Sex Differences

Distressed wives typically reported mean scores which were more toward the distressed end of the continuum than were husbands' mean scores. No such effect was found within the Nondistressed group. The results of the regression wnalyses suggest that there are sex differences in the relative importance of pleasing and displeasing behaviours with the Displease Rate accounting for 7.2% of the variance in husbands MAT scores (while Proportion Pleases added nothing) and Proportion Pleases accounting for 6.4% of the variance in wives MAT scores (while Displease Rate added nothing).

The MAT variable was found to be a powerful discriminator of distressed and nondistressed wives, while not appearing in the

discriminant function for husbands. One way of interpreting this is that while the more behaviourally-based measures have the capacity to correctly classify husbands, wives are more likely to respond subjectively to the existing behaviour exchange. The significantly higher Proportion Spouse-Related Activities reported by husbands suggests that husbands are more dependent on wives for recreational time than vice versa. These findings may, in part, explain previous observations regarding the higher degree of distress suffered by wives in ongoing relationships and by husbands immediately following the end of a relationship.

The discriminant analyses of developmental factors showed that when husband and wife data were analyzed together four of the five most important discriminating variables were related to the family of origin. When husband and wife data were analyzed separately, the husbands' discriminant function contained five variables associated with family of origin, while the wives' contained only two. These findings suggest that, when husband and wife are considered together, prior relationships with significant others are better predictors of marital satisfaction than are most of the other MPT variables. This has implications for behavioural marital therapy in that it may be possible to predict the type of dysfunctional pattern of interaction which is likely to develop given sufficient knowledge of past social relationships.

The tendency for husbands' satisfaction to be more strongly influenced by earlier relationships than is wives' satisfaction supports earlier findings (Haye, Blampied, Church and Priest, 1981). In reviewing marriage research, Barry (1970) found that husbands' background and personality variables and not wives' are associated with marital success.

In discriminating wives, "Feeling miserable" was found to be relatively twice as important as "Attachment to mother". This finding leads credence to the earlier proposal that the behaviours occurring within the distressed marriage are more readily translated by women than by men into subjective feelings, perhaps via negative cognitions about self-worth, for example. Barnet and Nietzel (1979) found that wives' self-esteem correlated highly with both the couple MAT and their own MAT scores, $r = .81$ and $r = .85$ respectively ($p < .0001$). This says nothing about a casual effect, however, since negative cognitions may either have been taken into the marriage, or developed as a result of marriage difficulties.

In examining sex differences the importance of communication skills training becomes clear. It appears that within a marital dyad one must deal with two people whose expectations of and experiences in close relationships are different and whose interpretations of the same behaviour are different. Behavioural theory must begin to incorporate relevant developmental and cognitive variables into a formulation of marital distress. As it does so, it is probable that the theoretical model will become one of relationship distress.

In conclusion, the present study has successfully replicated many previous findings regarding the differences between distressed and nondistressed couples using a New Zealand sample. In discriminating the two groups, and in predicting variance in MAT scores the ACQ, a simple behaviourally-based self-report measure emerged as the most powerful measure. An examination of sex differences suggest that a more valid model of marital distress would need to allow for certain developmental and cognitive variables.

CHAPTER III

GENERAL METHODS

The marital therapy programme devised for the present research was developed by the author, and is based on the previous work of several other researchers, in particular that of the Oregon Group and of Robert P. Liberman.

The therapeutic programme was developed to be used with small groups of couples. Two kinds of groups took part in the research. The first consisted of couples reporting marital distress, Study 2, and the second consisted of newlymarried couples, Study 3.

SUBJECTS

Recruitment of Couples

Initial attempts were made to recruit distressed couples through ministers of various denominations, lawyers, and social agencies. Attempts were also made to recruit newlymarried couples through ministers and through the Registrar General. Due to official secrecy and a lack of inter-agency co-operation, however, these sources failed to provide the number of referrals required and the assistance of local newspapers and radio stations was sought. Radio and television interviews were used to recruit distressed couples, while newspaper articles were used to recruit some newlymarried couples. Other newlyweds were approached directly, their addressed having been obtained from church registers and from the rolls of the Marriage Guidance Premarital Course.

Selection and Induction into Research

Distressed Couples. Distressed couples volunteering for the research were screened by the experimenter. The purpose of the research, and details of the commitment expected from each participating couple were explained. Only those couples deemed to be severely distressed, and able to fulfil all research commitments were admitted to the treatment study, Study 2. Many of the others were persuaded to volunteer for the comparative study, Study 1. A flow-diagram of the induction process is shown in Figure 3.1.

The definition of "severely distressed" was arrived at on the basis of their scores on the Areas of Change Questionnaire (ACQ), their scores on the Marital Adjustment Test (MAT), and on clinical impressions. In order to qualify as severely distressed, a couple had to meet two of three criteria: an ACQ score of 20 or more, a mean MAT score of 75 or less, and overt demonstration of maladaptive behaviours. The intention was to test the limits of the programme by dealing simultaneously with a variety of severe marital problems, particularly those apparently contributing to physical or psychological problems for one or both partners. The majority of couples met all three criteria.

Written information which restated the already provided verbal information about the experiment was given to each couple. Each couple was given a signed copy of a therapy contract. This contract is reproduced in Appendix IV. Couples were told that a set of questionnaires would be mailed out two weeks before the training was due to begin, and that completed questionnaires were to be brought to the first session.

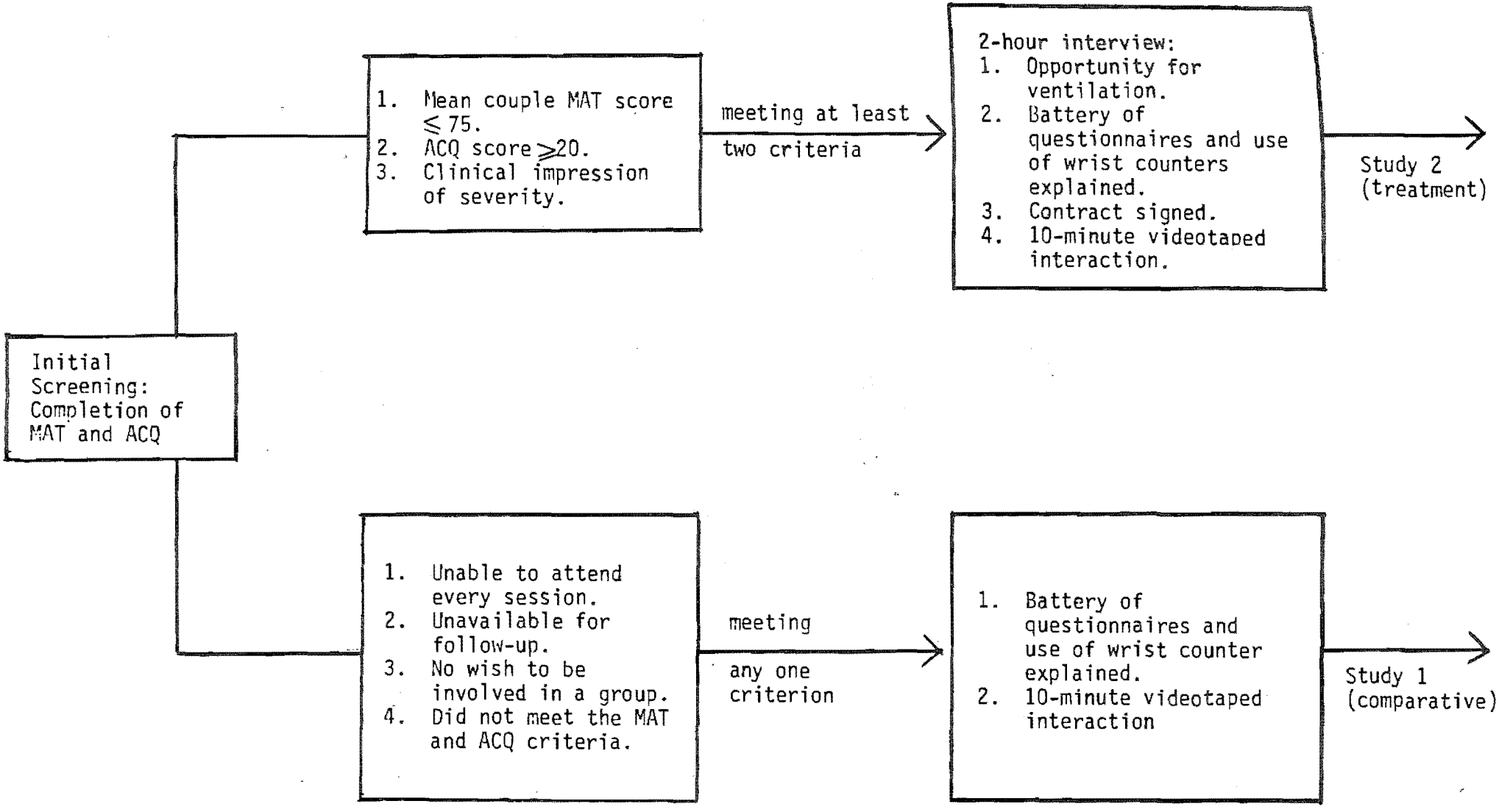


Figure 3.1. Flow chart showing the selection process for distressed couples.

Immediately prior to the conclusion of the interview, each couple was asked to identify what they believed to be a major relationship problem. Once a topic had been agreed upon, the couple was left alone for ten minutes to discuss this problem. The interaction was videotaped.

Newlymarried couples. Two groups of newlymarried couples were recruited for Study 3, an Experimental and a Control group. The aims of the research, potential gains to the couple, and degree of involvement were discussed at an initial interview. Those couples unable to meet all research commitments were screened out.

The interview was not intended as a clinical assessment. Information was sought regarding their own relationship, their relationship with their parents, their parents' relationship, their expectations regarding marriage, and their reasons for volunteering for the research. Data collection was explained, written information was provided, and contracts were signed. Each couple was asked to identify a topic relevant to themselves, and about which a decision had to be made. Once a topic had been agreed upon, the couple was left alone for ten minutes, during which time they were to attempt to reach a decision. The interaction was videotaped.

Half the newlymarried couples were told that the data they were to collect prior to training would be compared with data collected by a trained group. The rationale given for the design was that it was not known whether such intensive training would be more valuable in the first year of marriage or at a later stage.

MEASURES

The relationship measures used to assess the effects of the Canterbury Relationship Enrichment and Social Skills Training (CRESST) programme for both distressed and newlymarried couples were as follows: the Marital Adjustment Test (MAT), the Areas of Change Questionnaire (ACQ), the Inventory of Rewarding Activities (IRA), Current Time Distribution (CTD), the Spouse Observation Checklist (SOC), and the Marital Interaction Coding System (MICS). These measures have been described in Chapter II. The Marital Prediction Test (MPT), also described in Chapter II, was administered once only to all participants. Additional measures used as part of the CRESST battery of repeated measures were as follows.

Measurement of Life Changes and Individual Wellbeing

Self-Rating Scale (SRS). The SRS is the Center for Epidemiologic Studies Depression Scale (Markush and Favero, 1974) under a different name. The scale consists of 20 items taken from five previously developed scales. As a measure of depression, the SRS was preferred to the Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock and Erbaugh, 1961) because it was not so evidently a psychiatric test. The scale assesses respondents' feelings during the seven days prior to completion of the questionnaire. Respondents are asked to indicate on a 4-point scale, ranging from "Rarely" to "Most of the Time", how often they had been bothered by the feelings described in each of the 20 items. Scores can range from 0 to 60.

Life Events Questionnaire (LEQ). The LEQ as used in the present study represents a slight modification of that constructed by Tennant and Andrews (1976), using an Australian sample. The original 67 life event items were derived from the 61-item distress scale used by Paykel, Prusoff and Ulenhuth (1971) and the 43-item life change scale used by Holmes and Rahe (1967). Seven of the items included in the original version were dropped for the purposes of the present study. Items such as "You broke off your engagement" and "You became divorced" were not relevant for the subjects taking part in the present investigation.

The LEQ asks respondents to indicate whether or not particular events had occurred during the preceeding 3-month period. Each item on the questionnaire is scored according to a distress scaling, and a life change scaling, thus producing two scores, "Distress" and "Change". Scores on "Distress" items range from a low of one on "You had holidays for a week or more" to a high of 80 on "A child of yours died". Scores on "Change" items range from a low of two on "You had a minor illness" to a high of 72 on "You had a jail sentence".

Symptom Checklist (SCL). In the original 67-item version (Grant, Sweetwood, Yager and Gerst,1978) respondents are asked to indicate the frequency of occurrence of a symptom or behaviour during the previous two months on a five-point scale, ranging from "not at all" to "daily". As used in the present study, physical and emotional symptoms over the previous three months are measured. Three scores are derived, a Total Symptom score (which is based on responses to 56 items), a Dyspyoric Symptom score (which is based on response to an 11-item subset referring to symptoms of depression, anxiety and tension), and a Somatic Symptom score (which is based on a 10-item subset referring to bodily complaints).

Those items which loaded on a "nonconformity" scale in the original version of the questionnaire are not included in the current version.

PROCEDURE

The entire battery of questionnaires was administered immediately before and immediately after training both the Distressed group, and the newlymarried Experimental group. Three months following training, the MAT, SCL, SRS and LEQ were mailed out to each couple. The couples were asked to return the completed questionnaires by mail. Six months following training, the entire battery was mailed out, and couples were asked to return the completed questionnaires in person, at which time a 10-minute videotape was made of couple interaction as previously described. Mailings of abbreviated and complete versions of the CRESST battery alternated every three months for 18 months. Self-report and spouse observation data were recorded at home, and MICS data were recorded in the laboratory.

The procedure was similar for the newlymarried Control group. Initially, this group completed the full battery. Three months later the abbreviated version was completed, and thereafter the two versions were alternated for a further nine months.

Structure and Management of the CRESST Programme

After reviewing the literature on the contribution of the group to behavioural group therapy, Sansbury concluded,

> ... the group context can enhance the therapeutic outcomes of many behavioural approaches if the group process issues are effectively managed by the leader, and if that effective management involves the systematic application of known social learning principles (Sansbury, 1979, p 42).

In attempting to effectively manage group process issues, attention was paid to such concerns as leader behaviours, group conventions, environmental factors, and group cohesion at the planning stage.

Group Size. One newlymarried Experimental group contained seven couples. The four Distressed groups contained three or four couples each. The composition of the groups is described in detail in the relevant chapters.

Time Scale. Ten, weekly, 2-hour group training sessions were scheduled between 7.45 p.m. and 10 p.m. The five groups received two 2-hour follow-up meetings six months after they completed the training programme, and two 2-hour follow-up meetings 12 months after they completed the training. One 2-hour debriefing session was held 18 months after the training, and this was followed by individual debriefing sessions for each couple.

Environmental Factors. The training sessions were conducted in the Common Room of the Department of Psychology, University of Canterbury. A circular seating arrangement was used, with husband and wife sitting side by side, and co-leaders sitting separately within the circle. Half way through each session, a 15-minute break was taken in a nearby room where coffee, tea and biscuits were available, and where smoking was permitted. The move to an informal setting encouraged friendly social interaction.

Group Leaders. The author served as the female co-leader to all groups. During the research period, she completed a 2-year, graduate level clinical psychology practicum. Five male therapists served as co-leaders. Of the five, two were practising clinicians, one was a senior lecturer in the Department of Psychology, and two were graduate students in psychology. Two co-leaders were thought to be ideal so as to provide sufficient attention to each couple, to monitor what was happening within the group, and to provide feedback to each other during and following group sessions.

The presence of both male and female co-leaders facilitated roleplays and modelling.

Written guidelines were provided to each co-leader. (This material is reproduced in Appendix IV). Co-leaders met weekly prior to the training sessions to review session outlines and handouts, and to discuss programme content and the couples' progress.

Group conventions and practices. Each group member deposited $7.50, and contracted to earn money back during the course, at a rate of 75 cents per meeting, by attending each meeting, arriving punctually, and completing homework satisfactorily.

The provision of appropriate feedback, the generation of behavioural solutions, and the discouragement of ventilation of accumulated negative feelings during the group session were among the other important practices that were established. Co-leaders established these and other practices by modelling the desired behaviour, providing opportunities for participants to engage in similar behaviours, and reinforcing these behaviours when they occurred. Inappropriate behaviours were interrupted, or else dealt with away from the group setting.

Group cohesion. In order to promote group cohesion, a coffee break featured as part of each training session, name tags were worn until members knew each other, and a telephone "buddy" system was set up. Each couple was responsible for phoning one other couple during the week to inquire about their progress with the homework assignment. This procedure meant that each couple was in contact with two other couples. Husbands and wives took turns to make the telephone calls.

Acquisition and transfer of skills. Communication skills, presented in a stepwise sequence, were modelled and rehearsed during group sessions. This was followed by practice at home three times prior to the next session. Practice performances were monitored by means of homework assignment sheets. Contingency management was also practised at home. Group members assisted each other in the design of interventions, and weekly monitoring of all interventions, ensured that each member became familiar with several different types of contingency management. Participants were also given written hypothetical problems which required the application of communication and contingency management skills for their solution. It was expected that such homework exercises would result in skills acquired in the clinical setting being transferred to the home.

Maintenance of skills. To the extent that overlearning can be promoted in a period of ten weeks, every effort was made to do so. Material was repeatedly presented in different forms - spoken, written, and animated. Couples were given many opportunities during the sessions, and at home to practise the new skills. Those failing to complete homework exercises were taken aside at the beginning of the session in order to practise the previous week's skill, before advancing to new material.

Follow-up sessions served two purposes. Initially they were seen as a way of promoting maintenance. In addition, however, they proved to be a useful incentive to couples to return their questionnaires. No new therapeutic material was presented at the follow-up sessions. Newlymarried couples requested that parenting skills be covered in more detail. Distressed couples discussed their past and current problems, describing their own solutions, and offering potential solutions to other couples.

problems and solutions were formulated in behavioural terms by the couples themselves.

Materials and apparatus. Each participant was given a notebook in which a *Please* received was pinpointed and recorded each day, and frequency counts of target behaviours were also recorded. At the end of each session, handouts were provided which summarized or amplified material presented. Visual aids included charts, an edited version of the commercially available film, *Who Did What To Whom* (Mager, 1972), and a videotape dealing with affectional and sexual behaviours. The latter was produced by the author. Videotaped sexual material of unknown origin was also used. Other materials used included name tags, large sheets of graph paper, cue cards, baby oil, talcum powder, and paper towels.

Apparatus used during group sessions included a video recorder and monitor, blackboard, and bulletin board for display of charts and graphs. The training material originally on film was videotaped for group presentation. Use of the video monitor rather than a film projector and screen allowed for less intrusive technology and retention of the intimate seating arrangement. For the same reason, a bulletin board rather than an overhead projector was used for the display of charts and graphs.

FORMAT AND INTERVENTIONS

The session outlines, visual aids, and handouts are reproduced in Appendix IV. All sessions, with the exception of the first, began with a review of homework done during the preceding week. Homework typically included the recording of a daily *Please* received, the recording of a target behaviour, the practice of communication skills during three separate Executive Sessions, the study of assigned reading,

and the completion of written exercises. Executive Session Report Forms were discussed individually with each couple, while other homework tasks were discussed by the group as a whole.

Each member was asked to attempt a behavioural intervention which could be monitored by the group as a whole. A variety of target behaviours (relating to spouse, self, child, friend) were identified. The aim of the exercise was the acquisition of contingency management skills, not the solution of contentious relationship problems. Anxiety was identified as a problem for some group members. These members were provided with taped relaxation and in vivo desensitization instructions, and their progress monitored weekly.

Basic principles were presented didactically, and illustrated by roleplay and/or by videotaped material. Couples then rehearsed skills, incorporating the principles presented, and were given feedback. This combination of didactic presentation, illustration and practice was the core procedure employed throughout the sessions. Assigned reading and homework exercises were closely related to group activities. The content and specific procedures used in each session are outlined below.

Session 1

Group members were introduced to each other and the purpose of the research was restated. Deposits, charges for coffee, and completed questionnaires were collected, and a "buddy" system was established. Individual reactions to the 7-day recording of *Pleases* and *Displeases* were discussed.

Principles introduced. Using examples of *Pleases* received, instrumental and affectional *Pleases* were pinpointed and discriminated. The concept of reciprocity as an exchange of *Pleases* was discussed. Using the film *Who Did What to Whom* (Mager, 1972) the principles of positive and negative reinforcement, punishment and extinction were introduced.

Modelling/behaviour rehearsal. Inappropriate and appropriate acknowledgement of *Pleases* was modelled by the co-leaders. Couples rehearsed appropriate acknowledgement of *Pleases*.

Materials. Material used included a videotaped copy of the film *Who Did What to Whom* (Mager, 1972), nametags, notebooks, and prepared handouts (Glossary of Terms and Survey of Rewards).

Homework. Couples read the Glossary of Terms handout and completed the Survey of Rewards questionnaire. Each day, members recorded one *Please* received from their partner, and exchanged notebooks. In addition, they recorded the number of times they acknowledged *Pleases* received.

Session 2

Review of homework. Each member described one *Please* received from his/her partner during the week. Co-leaders examined the notebooks to ensure that recorded *"Pleases"* were adequately pinpointed, and were devoid of implied negatives. The completed Survey of Rewards questionnaires were collected, and members' understanding of the Glossary of Terms handout was queried. The daily group mean acknowledgements of *Pleases* was plotted for the preceeding seven days.

Principles introduced. Communication was explained in terms of three components, a sender, a receiver and a message. Good communication was defined as "intent equals impact". Messages were described as having both verbal and nonverbal components. As a first step in contingency management, members were asked to identify target behaviours. Arrangements were made for those identifying anxiety as a target behaviour to receive taped relaxation instructions. The Executive Session was introduced as a time set aside for practising communication skills at home.

Modelling/behaviour rehearsal. Co-leaders modelled the sending and paraphrasing of a neutral message, and inappropriate and appropriate ways to arrange an Executive Session. Members rehearsed sending and paraphrasing a neutral message. Co-leaders provided feedback regarding content, eye contact and posture.

Materials. Daily mean acknowledgements of *Pleases* were plotted on graph paper. A diagram illustrating the communication process was displayed. Two prepared handouts, Communication Process and the Executive Session Report Form were provided.

Homework. Members counted target behaviours, recorded one *Please* each day and exchanged notebooks. Three Executive Sessions were arranged for additional practice in the sending and paraphrasing of neutral messages. Performances were rated on the Executive Session Report Form provided. Members read the Communication Process handout.

Session 3

Review of homework. Each member described a *Please* received from spouse. Notebooks and Executive Session Report Forms were examined by co-leaders. Members reported the daily frequencies of target behaviours, and their understanding of the Communication Process was queried.

Principles introduced. The ambiguity of nonverbal messages was discussed.

Modelling/behaviour rehearsal. Group members attempted to transmit feelings using nonverbal cues, and to identify feelings transmitted by others. Inappropriate and appropriate ways of sending and receiving positive messages were modelled by the co-leaders.

Members rehearsed sending and paraphrasing a positive feeling message. Co-leaders assisted listeners to clarify the positive feeling where necessary.

Materials. Two visual aids were used. These included a set of cards, each card containing a neutral statement with instructions regarding how to convey feelings, and a chart demonstrating alternative ways to begin a positive feeling message. Two prepared handouts, Feelings, and the Executive Session Report Form were provided.

Homework. Members counted target behaviours, recorded one *Please* each day, and excahnged notebooks. Three Executive Sessions were arranged for additional practice in sending, paraphrasing and clarifying positive feeling messages. Performances were rated on the Executive Session Report Form provided. Members read the Feelings handout.

Session 4

Review of homework. Each member described a *Please* received from spouse. Notebooks and Executive Session Report Forms were examined by co-leaders. Members reported daily frequencies of target behaviours, and these were plotted on graph paper.

Principles introduced. As the next step in contingency management, members were asked to identify potential reinforcers and punishers. Responses to the Survey of Rewards questionnaire were used to assist in this exercise.

Modelling/behaviour rehearsal. Inappropriate and appropriate ways to request a *Please* were modelled. Couples rehearsed the requesting of a *Please*, with reflection of content and feeling.

Materials. Large sheets of graph paper were used to plot target behaviours. Based on the previous week's data, these had been prepared prior to the session.

A chart demonstrating alternative ways to begin a request for a *Please* was displayed. Two prepared handouts, Reward? Punish? Ignore? and the Executive Session Report Form were provided.

Homework. Members counted target behaviours following intervention, recorded one *Please* each day, and exchanged notebooks. Three Executive Sessions were arranged for additional practice in requesting a *Please*, and in reflecting content and feeling. Performances were rated, and members completed the Reward? Punish? Ignore? exercise.

Session 5

Review of homework. Each member described a *Please* received from spouse. Notebooks and Executive Session Report Forms were examined by co-leaders. Members reported the daily frequencies of target behaviours, and their understanding of behavioural principles was queried. Members' answers to the Reward? Punish? Ignore? exercise were discussed.

Principles introduced. Accidental training of significant others was explained in terms of inappropriate use of reinforcement, punishment, and extinction. The appropriate use of shaping and modelling was discussed. Negative reciprocal systems with their reliance on negative reinforcement and punishment were illustrated as a negative spiral. The undesirable side-effects of punishment were discussed.

Modelling/behaviour rehearsal. Co-leaders and video models demonstrated the shaping of unwanted behaviour by inappropriate use of negative and positive reinforcement, punishment, and extinction. Inappropriate and appropriate ways of expressing and of responding to negative feelings were modelled by co-leaders. Couples rehearsed the expression and reflection of negative feeling messages,

with clarification where necessary.

Materials. Graphs illustrating target behaviours were ongoing. Selected vignettes from the film *Who Did What to Whom* (Mager, 1972) were used to illustrate accidental training. Two charts were used to illustrate the undesirable side-effects resulting from the use of punishment, and the reciprocal negative spiral. Prepared handouts included a second Glossary of Terms and the Executive Session Report Form.

Homework. Members counted target behaviours, recorded one *Please* each day, and exchanged notebooks. Three Executive Sessions were arranged for additional practice in the expression, reflection and clarification of negative feelings. Performances were rated, and members read the Glossary of Terms.

Session 6

Review of homework. Each member described a *Please* received from spouse. Notebooks and Executive Session Report Forms were examined by co-leaders. Members reported the daily frequencies of target behaviours, and their understanding of behaviour change strategies was queried.

Principles introduced. The differences between assertive, aggressive, and passive behaviours were discussed. Assertion was described as a positive behaviour change strategy. The role of passive and aggressive behaviours in the accidental training of the significant other was explained. Rules for the appropriate expression of negative feelings were provided, and the harmful consequences of not following such rules were discussed.

Modelling/behaviour rehearsal. Co-leaders and video models demonstrated aggressive, passive and assertive behaviours. Co-leaders modelled the assertive exchange of negative feelings. Couples rehearsed the assertive exchange of negative feelings. Co-leaders prompted the exchange until one partner requested a change and the other partner replied to that request. There was no requirement that the couple reach agreement.

Materials. Graphs illustrating target behaviours were ongoing.

Selected vignettes from the film *Who Did What to Whom* (Mager, 1972) were used to illustrate the role of passive behaviour in accidental training. Charts summarizing (i) behaviour change strategies, (ii) the differences between aggressive, passive and assertive people, (iii) the rules for the expression of negative feelings were displayed. Newlymarried couples used the Inventory of Marital Conflicts (IMC: Olson and Ryder, 1970) to assist them in the "exchange of negative feelings" exercise. The Executive Session Report Form and a summary of the rules governing the appropriate expression of negative feelings were the two handouts provided.

Homework. Members counted target behaviours, recorded one *Please* each day, and exchanged notebooks. Three Executive Sessions were arranged for additional practice in the emphathetic exchange of negative feelings with requests for changes. Performances were rated, but agreement did not have to be reached. Newlymarried couples used both IMC conflict situations and personally relevant topics for practice purposes.

Session 7

Review of homework. Each member described a *Please* received from spouse. Notebooks and Executive Session Report Forms were examined by co-leaders. Members reported the daily frequencies of target behaviours.

Principles introduced. The relationship between thoughts and feelings was made explicit and the concept of relabelling was introduced as a way of gaining more control over feelings. Use of recreation time was discussed.

Modelling/behaviour rehearsal. The consequences of failing to follow the rules for expressing feelings were illustrated in roleplay by the co-leaders.

Couples engaged in a role-reversal based on an Executive Session topic. Co-leaders modelled use of the relabelling strategy in change situations, and the expression of negative feelings regarding the use of recreational time. In general, distressed couples' rehearsals related to problems with recreation time, while newlymarried couples' rehearsals related to problems with life changes.

Materials. Graphs illustrating target behaviours were ongoing. Charts illustrating (i) the consequences for not following the rules governing the appropriate expression of negative feelings, (ii) change as a loss of *Pleases*, (iii) effective scheduling of recreation time were displayed. Several handouts were provided - Coping with Persistent Bad Moods, a summary of the rules governing the expression of negative feelings, material from *Talk Sense to Yourself* (McMullin and Casey, 1975), the Executive Session Report Form, and a homework sheet.

Homework. Members counted target behaviours, recorded one *Please* each day, and exchanged notebooks. Three executive Sessions were arranged for additional practice in the expression and reflection of negative feelings, particularly as related to change and/or recreation time. Couples attempted to use relabelling strategies, and to focus on potential future gains in *Pleases* rather than on lost *Pleases*. Each member listed those recreational activities in which they would like to engage given no constraints, and 10 activities in which couples could engage for less than $2. In addition, each member chose two responsibilities for spouse and two privileges for self, and completed the exercise based on material from *Talk Sense to Yourself* (McMullin and Casey, 1975).

Session 8

Review of homework. Each member described a *Please* received from spouse.

Notebooks and Executive Session Report Forms were examined by co-leaders. Members reported the daily frequencies of target behaviours, and their understanding of the exercise based on material from *Talk Sense to Yourself* (McMullin and Casey, 1975) was queried. Homework sheets were collected.

Principles introduced. The Premack Principle was introduced as Grandmother's Law. A discussion of its application in those situations in which positive reciprocity appears not to be operating layed the groundwork for the introduction of contingency contracting.

Modelling/Behaviour rehearsal. Video models demonstrated situations in which Grandmother's Law could usefully be applied. Using guided rehearsal, each couple concluded a contract based on those responsibilities and privileges previously recorded on the homework sheets.

Materials. Graphs illustrating target behaviours were ongoing. Selected vignettes from the film *Who Did What to Whom* (Mager, 1972) were used to illustrate situations in which the Premack Principle should be adopted. A chart summarizing all behaviour change strategies taught was displayed. Four contingency contract forms per couple were used, one during the training session, and three as handouts. Other prepared handouts included, How Children Learn, Workshop Concepts, a summary of behaviour change strategies, and a relationship problem-solving exercise.

Homework. Members counted target behaviours, recorded one *Please* each day, and exchanged notebooks. Couples complied with the contract as drawn up during Session 7. Three Executive Sessions were arranged for additional practice in contracting. Practice contracts were not to be implemented until they had been approved by a co-leader.

Couples read the handouts, and attempted to use their knowledge of relationship skills to resolve the four problems described in one of the handouts.

Session 9

Review of homework. Each member described a *Please* received from spouse. Notebooks and practice contracts were examined by co-leaders. Existing and proposed contracts were revised as necessary. Members reported the daily frequencies of target behaviours. The homework assignment was collected.

Principles introduced. Sexual and affectional behaviour problems were explained in terms of inappropriate use of reinforcement, punishment, and extinction. The role played by anxiety in the maintenance of such problems was discussed.

Modelling/behaviour rehearsal. Video models demonstrated inappropriate and appropriate ways of requesting affection and sex, and of responding to such requests. Couples rehearsed appropriate ways to request affection and sex, and to respond to such requests. Co-leaders modelled the giving and receiving of hand massage with appropriate feedback. Couples rehearsed the giving and receiving of hand massage with appropriate feedback.

Materials. Graphs illustrating target behaviours were ongoing. A videotape produced by the author was used to illustrate the principles of reinforcement, punishment, and extinction as applied to affectional and sexual behaviours. Oil, powder, and paper towels were used for the hand massage exercise. Prepared handouts included Sexual Exercise 1, Sexual Exercise 2, a homework instruction sheet, and a contingency contract form.

Sexual Exercise 1 was used during the session in order to identify desired behaviours that could form the basis of a sexual contract to be completed at home.

Homework. Members counted target behaviours, recorded one *Please* each day, and exchanged notebooks. Couples complied with approved contracts. Each member made five requests daily for low intensity affection, and (during the week) one request for sex, or two requests for high intensity affection. Examples were given. Five Executive Sessions were arranged, four featuring massage exercises and discussions based upon the two Sexual Exercises. During the fifth Executive Session, an affectional/sexual contract was drawn up, but it was not implemented until it had been discussed with a co-leader.

Session 10

Review of homework. Each member described a *Please* received from spouse. Notebooks and the affectional/sexual contract were examined by co-leaders. Contracts were revised as necessary. Following correction, the relationship problem-solving exercise was handed back. A composite list of suggestions for inexpensive recreation had been prepared, and was given out. Based on individual members' lists of desirable recreational pursuits, compatible couple activities were suggested.

Principles introduced. Male and female sexuality was discussed in relation to similarities and differences, and to communication difficulties. Sexual intercourse and sex play were discriminated.

Modelling. Video models were used to demonstrate male and female masturbation, and sex play.

Materials. Copies of commercially made videotapes illustrating male and female masturbation, and sex play were used. The original source of this material is unknown. A chart illustrating how couples can increase or diversify their sexual contacts was displayed. A prepared handout, Increasing the Frequency of Sexual Contact, was provided.

Homework. Couples were instructed to review all course material, to attempt to increase or diversify their sexual contacts, to implement the affectional/sexual contract as discussed with the co-leader, and to reschedule recreational time so as to include some of the suggested inexpensive activities.

CHAPTER IV

A BEHAVIOURAL INTERVENTION TO TREAT MARITAL DISTRESS

The problem of maintaining therapeutic improvement besets all forms of psychological treatment. In general, behavioural research and therapy have been directed toward producing initial treatment changes, and the study of the processes of generalization and maintenance has lagged behind (Wilson, 1980). The most frequent treatment of generalization has been described as one of "Train and Hope" (Stokes and Baer, 1977).

Behavioural marital research is no exception. To date, research in this field has been concerned primarily with the evaluation of treatment effects by way of group comparisons (Harrell and Guerney, 1976; Jacobson, 1978; Liberman et al., 1976), or case studies (Patterson and Hops, 1972; Stuart, 1969b; Weiss et al., 1973), or with the investigation of theoretical concepts (Jacobson et al., 1980; Margolin, 1978; Robinson and Price, 1980). While behavioural marital therapy has repeatedly been shown to produce significant improvements, there has been little investigation of the processes involved in maintaining treatment gains.

Stokes and Baer (1977) have argued that programming of maintenance and generalization procedures should be a fundamental component of treatment. Yet, to date, few attempts have been made to promote durability of behaviour changes by developing coping strategies explicitly designed for use in a broad range of contexts (Roskies and Lazarus, 1980).

The training programme described in Chapter III attempted to do this by repeatedly relating the use of new skills to other relationships besides the marital dyad, by requiring homework assignments so that skills were practised in the natural environment, and by reinforcing evidence of transfer of skills. Other strategies incorporated into the training included the promotion of overlearning, the use of booster sessions (Franks and Wilson, 1978), the promotion of environmental change within the concept of reciprocal determinism (Bandura, 1978), and the promotion of self-efficacy (Bandura, 1977b). Because coping responses may be blocked by anxiety, group members who were experiencing high levels of anxiety were given relaxation training.

The CRESST programme was thus designed to maximize durability of behaviour changes. Since maintenance failures can provide information which is as important as that provided by maintenance successes, it is important to study both failures and successes. Information about the process of relapse is expected to have important implications for prevention and treatment programmes (Marlett and Gordon, 1980).

Significant correlations between stressful life events and symptoms of ill health have been reported repeatedly (Rahe, Meyer, Smith, Kjaer and Holmes, 1964; Holmes and Masuda, 1974; Rahe, 1974; Grant et al, 1978). Marriage, which might be expected to serve as a buffer between the individual and environmental stress, appears increasingly not to be fulfilling this role. More and more marriages are ending in divorce, a state which Bloom et al. (1979) describe as a stressor of the first magnitude.

It can be assumed that the period of marital distress leading to separation or divorce also represents a stressor for all family members.

Significant correlations between ratings of child deviance and marital adjustment scores have been shown (Johnson and Labitz, 1974; Oltmanns, Broderick, and O'Leary, 1977). Longfellow (1979) reviewed studies of the impact of divorce on children, and concluded that exposure to marital distress is more damaging to children than is divorce per se.

Correlational studies have shown significant relationships between marital satisfaction and depression (Coleman and Miller, 1975), and between physical health, depression and marital satisfaction (Weiss and Aved, 1978). Since physical health and depression tend to covary as do depression and marital satisfaction, the relationship between physical health status and marital satisfaction might be a spurious one. Weiss and Aved (1978) concluded that a direct test of the relationship between physical health and marital satisfaction is needed in order to discover whether marital therapy can produce improved physical health on the part of the partners. The present study attempts just such a test.

The intensive study of single cases has been suggested as an alternative to the nomothetic experimental design in circumstances where it is difficult to justify using a control group, and the experimental group members do not have similar symptoms (Barlow and Hersen 1973; Birnbrauer, Peterson, and Salnick 1974; Gottman, 1973; Hayes, 1981; Kiesler, 1981). There is no reason to assume that marital distress represents a unitary symptomatology, hence the assumption underlying experimental group designs (that the results are applicable to all patients with the same diagnosis) may be in error.

In the present study, group data was used to measure treatment effects, sex differences and the inter-relationships between marital distress, somatic and dysphoric symptoms, life events and depression.

These interrelationships were investigated by examining the correlations between repeated scores on the Marital Adjustment Test, the Symptom Checklist, the Self-Rating Scale for Depression, and the Life Events Questionnaire. In addition, an idiothetic approach to the study of maintenance was undertaken. Almost all of the studies reviewed in Chapter I averaged data across individuals. This practice may lead to spurious conclusions. Interventions do not merely have an "effect" but an "effect pattern" across time (Gottman, 1973).

For the present study, it was assumed that any "effect patterns" were best investigated by treating each couple as a single experiment. Both outcome and process data were collected in order to address the issue of what therapy can realistically be expected to do, for whom it can be expected to work, and for whom it will fail (Barlow, 1981; Strupp, 1981; Yeaton and Sechrest, 1981). A series of systematic replications was expected to highlight individual differences rather than averaging them out. This procedure leaves open the possibility that failures may be related to specific client characteristics (Barlow and Hersen 1973).

The present study incorporated the essential features of single case methodology (Birnbrauer et al., 1974). Information was collected repeatedly, the procedure was replicated, and the procedures are replicable by others. Because of ethical considerations, it was not possible to establish a repeated measures baseline. Multiple measures (Hayes, 1981; Nelson, 1981) were used at each data point. Two of the measures (Spouse Observation Checklist and Current Time Distribution) involved 7-day record-keeping. Four other measures (Self-Rating Scale, Inventory of Rewarding Activities, Symptom Checklist and Life Events Questionnaire) involved retrospective records covering events over one week, four weeks or three months.

The comprehensive, time-consuming measurement, and the length of follow-up made more frequent assessment inadvisable. More frequent assessment would probably have resulted in more client resistance and less valid data.

AIMS

The aims of Study 2 were.

1. To investigate the differences between the pretreatment scores of those who completed the programme and those who dropped out.
2. To determine the initial effects of the treatment programme on those who completed the programme and those who dropped out.
3. To determine whether husbands and wives were differentially affected by marital distress.
4. To investigate the extent to which group treatment gains were maintained over time, and whether or not some gains were more durable than others.
5. To investigate the relationship between marital distress and symptoms of illness.
6. To investigate which types of marital problems responded best to therapy.
7. To investigate whether treatment failures could be related to specific client characteristics.
8. To determine whether any relationship existed between initial treatment gains and maintenance of those gains.

METHODS

The recruitment of couples and the training programme have been described in Chapter III.

Subjects

The subjects were 13 distressed couples, assigned to one of four therapy groups. Three groups were made up of three couples plus two co-leaders, while one group was made up of four couples and two co-leaders. Of the 13 couples, only seven remained as research subjects throughout the entire 22-month period. Differences between the initial scores of the Completers and the Dropouts are examined later in the chapter. The demographic characteristics of the two groups are shown in Table 4.1.

Table 4.1

Demographic characteristics of the distressed husbands and wives.

		Completers (n=7)		Dropouts (n=6)	
		Wives	Husbands	Wives	Husbands
Age (years)	$\bar{x}$	28.6	30.7	34.3	36.8
	S.D.	3.4	4.1	9.9	10.4
Years married	$\bar{x}$	7.0		11.2	
	S.D.	3.2		9.9	
Education (yrs)	$\bar{x}$	12.7	13.1	11.3	12.0
	S.D.	1.7	3.2	2.0	2.1
No. of children	$\bar{x}$	2.1		2.5	
	S.D.	1.2		1.6	

Measures

The measures used in the present study have been described in Chapters II and III. Some of the measures yield more than a single score. The measures and the scores derived from them are listed in Table 4.2.

Table 4.2

The CRESST battery of measures as administered to a group of distressed couples.

1.	Marital Prediction Test (MPT)	
	score:	MPT
2.	Marital Adjustment Test (MAT)	
	score:	MAT
3.	Areas of Change Questionnaire (ACQ)	
	score:	ACQ
4.	Inventory of Rewarding Activities (IRA)	
	score:	Proportion Spouse-Related Activities (Prop S-R)
5.	Spouse Observation Checklist	
	scores:	Please Rate (P-rate)
		Displease Rate (D-rate)
		Proportion Pleases (Prop P)
6.	Current Time Distribution (CTD)	
	scores:	Rewarding Time Spouse (RTS)
		Proportion Rewarding Time Spouse (Prop RTS)
7.	Self-Rating Scale for Depression (SRS)	
	score:	SRS
8.	Life Events Questionnaire (LEQ)	
	scores:	Stress (LEQ-S)
		Change (LEQ-C)
9.	Symptom Checklist (SCL)	
	scores:	Total Symptoms (SCL-T)
		Somatic Symptoms (SCL-S)
		Dysphoric Symptoms (SCL-D)
10.	Marital Interaction Coding System (MICS)	
	scores:	Problem Solving (PS)
		Positive Verbal (PV)
		Positive Nonverbal (PNV)
		Negative Verbal (NV)
		Negative Nonverbal (NNV)

Procedure

Following pretesting on the above measures, 13 couples were trained as described in Chapter IV. Posttraining assessment was made on all measures, with the exception of the MPT, immediately following training, and again at 6, 12 and 18 months.

Additional measures were obtained on the MAT, SCL, LEQ and SRS at 3, 9 and 15 months. Couples were seen individually after training, and again at 6, 12 and 18 months, at which times their problem-solving interaction was videotaped. Group maintenance sessions were held at 6 and 12 months. Maintenance sessions consisted of four hours of booster training, during which previous material was reviewed, but no explicitly new material was introduced.

Following treatment, one couple failed to complete the assessment, and during the 18-month follow-up another five couples stopped returning data. At 18-months, seven couples were debriefed. Treatment effects are described primarily in terms of these seven couples.

RESULTS AND DISCUSSION

PART I: GROUPED DATA

Equivalence of the Completer and Dropout groups

Table 4.3 shows the means and standard deviations of eleven pretreatment measures for seven Completer couples and six Dropout couples.

The equivalence of the Completer and Dropout groups with respect to pretreatment scores as shown in Table 4.3. was tested by means of a 2-way (Group X Sex) multiple analysis of variance. The MANOVA did not indicate a significant main effect for Group ($p < .50$) or Sex ($p < .09$), nor a significant Group X Sex interactive effect ($p < .98$). Similarly, no significant main effects for Group were found when a 1-way multiple analysis of variance was performed on the demographic data shown in Table 4.1 ($p < .20$).

Table 4.3

Mean scores and standard deviations of the distressed husbands and wives on 11 scores prior to training.

Score		Completers		Dropouts	
		Wives	Husbands	Wives	Husbands
MPT	$\bar{x}$	275.2	287.6	297.8	273.3
	S.D.	63.8	52.4	60.1	74.8
MAT	$\bar{x}$	57.1	69.7	54.2	80.8
	S.D.	17.8	15.1	21.0	11.2
ACQ	$\bar{x}$	25.9		27.2	
	S.D.	8.5		6.6	
P-rate	$\bar{x}$	.64	.56	.68	.78
	S.D.	.52	.40	.20	.09
D-rate	$\bar{x}$	.55	.52	.81	.70
	S.D.	.40	.46	.70	.51
Prop P	$\bar{x}$	.56	.54	.51	.57
	S.D.	.16	.13	.20	.17
RTS	$\bar{x}$	2.04	2.62	1.77	3.18
	S.D.	1.06	1.16	1.80	1.07
Prop RTS	$\bar{x}$	.50	.62	.43	.61
	S.D.	.22	.24	.32	.22
Prop S-R	$\bar{x}$	.45	.53	.49	.63
	S.D.	.14	.13	.19	.15
SRS	$\bar{x}$	9.6	15.7	22.2	12.8
	S.D.	7.1	13.5	15.8	5.9
SCL-T	$\bar{x}$	45.6	41.0	54.5	34.2
	S.D.	13.7	13.5	27.8	16.0

While these results indicate that Completers and Dropouts did not differ in any systematic way, an examination of Table 4.1 suggest that age and number of years married are characteristics of distressed marriages which could be related to treatment outcome.

Dropout husbands reported high MAT scores relative to Completer husbands, while Dropout wives reported relatively high SRS (depression) scores. This may indicate less desire for change by Dropout husbands as compared to Completer husbands, with Dropout husband complacency leading to higher depression in wives pretreatment and fewer behaviour changes in husbands posttreatment (assuming that dropping out is significantly related to maintenance failure). While a finding of significant sex differences within the Completer and Dropout groups would have supported the earlier findings of significant sex differences within the distressed validation group, the differences merely approached significance ($p<.09$). As in the comparative study, the general trend was for wives to report scores more in the distressed direction than did husbands.

Treatment Effects

In order to investigate the immediate impact of training, a 2-way (Treatment X Sex) multiple analysis of variance was performed. Completer group pretreatment scores were compared with posttreatment scores. The MANOVA showed significant main effects for Treatment ($F(10,15) = 7.08$, $p<.001$) but not for Sex. No Group X Sex interactive effects were found. These results were replicated when the Dropout group data was similarly analysed($F(10,9) = 3.26$, $p<.05$). A summary of the univariate F ratios for main effects on Treatment and the standardized discriminant function coefficients are shown for the Completer group in Table 4.4 and for the Dropout group, in Table 4.5.

Table 4.4

Univariate and multivariate analyses of variance,
pre- and posttreatment scores for Completer husbands and wives.
Main effect for Treatment

	Pretreatment		Posttreatment		F	Standardized Discriminant Function Coefficient
	Wives $\bar{x}$	Husbands $\bar{x}$	Wives $\bar{x}$	Husbands $\bar{x}$		
MAT	57.1	69.7	81.6	101.6	13.94***	0.639
ACQ	25.9		12.1		15.80***	-0.798
P-rate	.64	.56	.91	.79	2.00	0.395
D-rate	.55	.52	.21	.20	7.32*	-0.419
Prop P	.56	.54	.78	.79	19.10***	0.540
RTS	2.04	2.62	2.70	3.51	1.86	-0.561
Prop RTS	.50	.62	.56	.62	0.11	-0.577
Prop S-R	.45	.53	.59	.62	7.17*	0.607
SCL	45.6	41.0	27.3	26.7	9.30**	-0.143
SRS	9.6	15.7	8.7	9.3	1.07	0.072

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Multiple R=.91
$F(10,15)=7.08, p \leq .001$

Table 4.5

Univariate and multivariate analyses of variance, pre- and posttreatment scores for Dropout husbands and wives. Main effect for Treatment.

	Pretreatment		Posttreatment		F	Standardized Discriminant Function Coefficient
	Wives $\bar{x}$	Husbands $\bar{x}$	Wives $\bar{x}$	Husbands $\bar{x}$		
MAT	54.2	80.8	97.4	93.4	11.34*	1.302
ACQ	27.2		17.4		10.27*	-0.852
P-rate	0.68	0.78	1.04	1.02	2.32	0.648
D-rate	0.81	0.70	0.84	0.59	0.01	0.641
Prop P	.51	.57	.68	.71	3.59	0.419
RTS	1.77	3.18	3.82	3.54	2.69	-0.007
Prop RTS	.43	.61	.66	.66	1.67	0.143
Prop S-R	.49	.63	.57	.67	0.83	0.130
SCL	54.5	34.2	40.4	30.8	1.21	-0.023
SRS	22.2	12.8	9.8	12.8	1.67	0.821

* $p < .005$

Multiple R=.88
$F(10,9)=3.26$, $p < .05$

A comparison of the results in Tables 4.4 and 4.5 shows that the treatment programme produced more powerful effects within the Completer group than within the Dropout group. Six significant univariate differences were reported by the Completer group, compared with two for the Dropout group. For the Completer group, the ACQ was found to be the most powerful discriminating variable, and the mean posttreatment ACQ score was just within the range of scores reported by happy couples in the comparative study. Dropout couples, on the other hand, reported a mean posttreatment ACQ score which was well within the distressed range. The most powerful discriminating variable for Dropout couples was the MAT score.

These findings suggest that one of the most important changes produced by the training programme was a reduction in the level of conflict between the partners, and that this initial reduction is related to the dropout rate. If one assumes that behaviour changes are less durable for those couples who dropout, then it seems probable that an initial significant improvement in the ACQ score is related to durability of treatment effects. Significant initial improvement in MAT scores appears to be less related to the dropout rate and thus perhaps to the durability of treatment effects. Yet it is the MAT or similar score which is most frequently used to monitor maintenance of treatment gains.

Durability of Treatment Gains Within the Completer Group

Changes in scores over time are illustrated in Figures 4.1 to 4.12. Husband and wife data are presented separately. The level of marital satisfaction every three months is shown in Figure 4.1. The mean wife score was 57.1 pretreatment. Following treatment the mean score rose to 81.6, a level which was maintained over time.

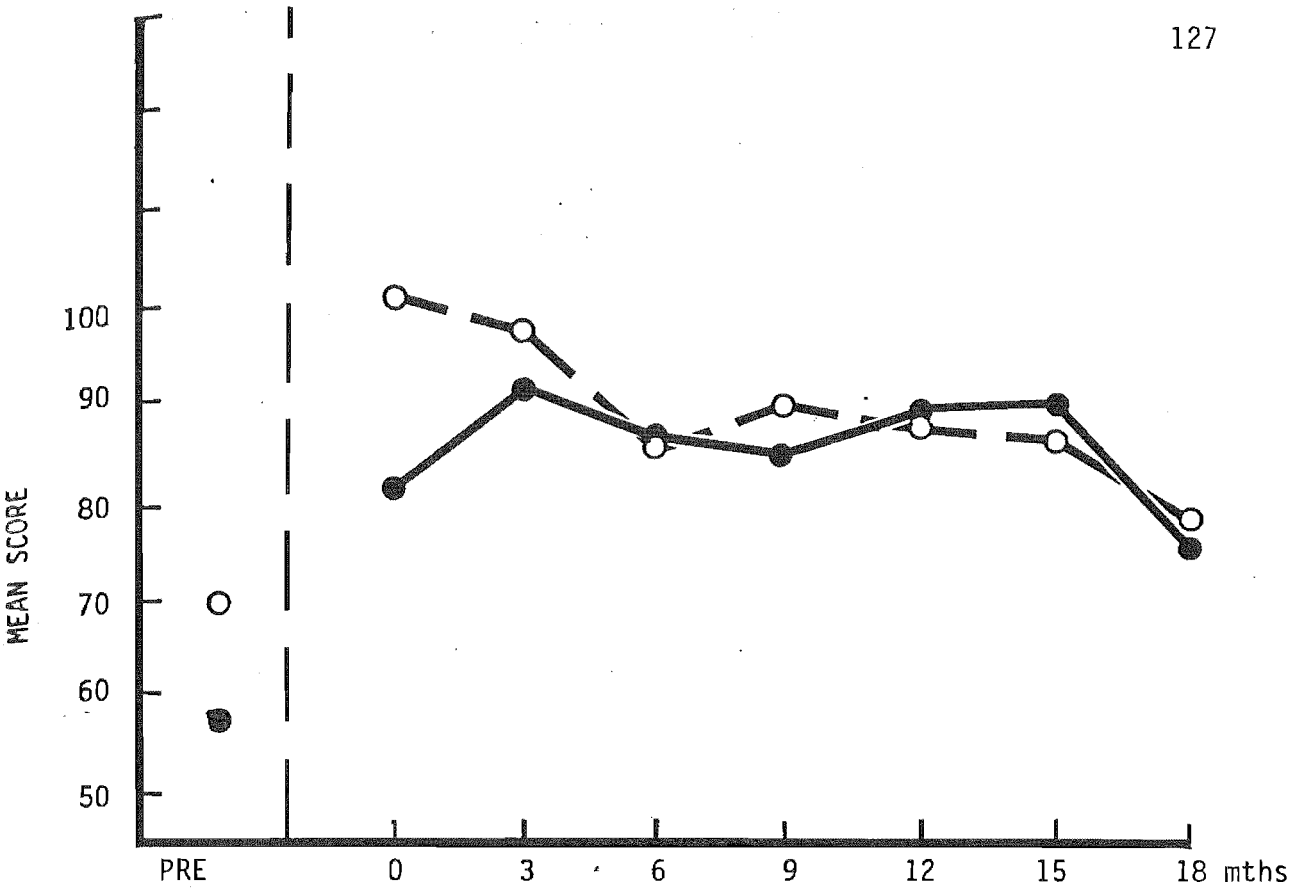


Figure 4.1. Mean Marital Adjustment Test scores for Completer husbands and wives every three months.

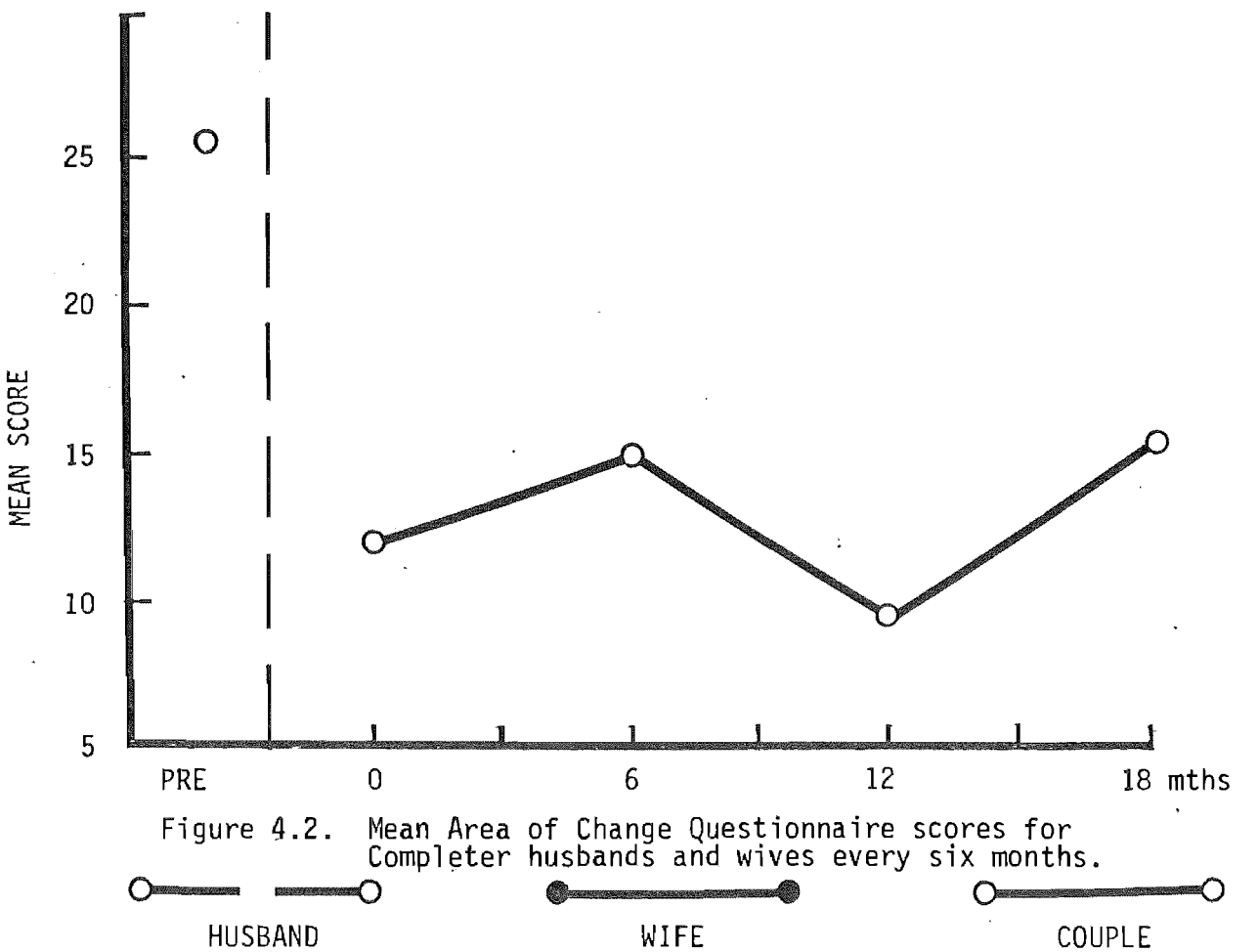


Figure 4.2. Mean Area of Change Questionnaire scores for Completer husbands and wives every six months.

The corresponding scores for husbands were 69.7 and 101.6. However, the mean husband score fell over time.

The level of couple conflict every six months is shown in Figure 4.2. The mean couple ACQ score was 25.9 pretreatment. Following treatment, the mean score decreased to 12.1, and remained close to this value over time.

The quality of behaviour exchanges every six months are shown in Figures 4.3 to 4.5. There was an initial increase in the mean Please Rate (Figure 4.3) from 0.63 per hour for wives and 0.56 per hour for husbands pretreatment to 0.91 and 0.79 respectively posttreatment. While the mean Please Rate for husbands increased to 0.91 per hour at six months, the long term trend was downward. At 18 months, the Please Rate for both husbands and wives was below baseline level.

There was an initial decrease in the mean Displease Rate (Figure 4.4) from 0.55 per hour for wives and 0.52 per hour for husbands pretreatment to 0.21 and 0.20 respectively posttreatment. This level was maintained over time. There was an initial increase in the mean Proportion Pleases (Figure 4.5) from .56 for wives and .54 for husbands pretreatment to .78 and .79 respectively posttreatment. The mean score for both husbands and wives remained well above baseline over time.

Figure 4.6 illustrates a measure of avoidance behaviour every six months. There was an initial increase in the mean Proportion Spouse-Related Activities from .45 for wives and .53 for husbands pretreatment to .59 and .62 respectively posttreatment. Gains were maintained for 12 months only.

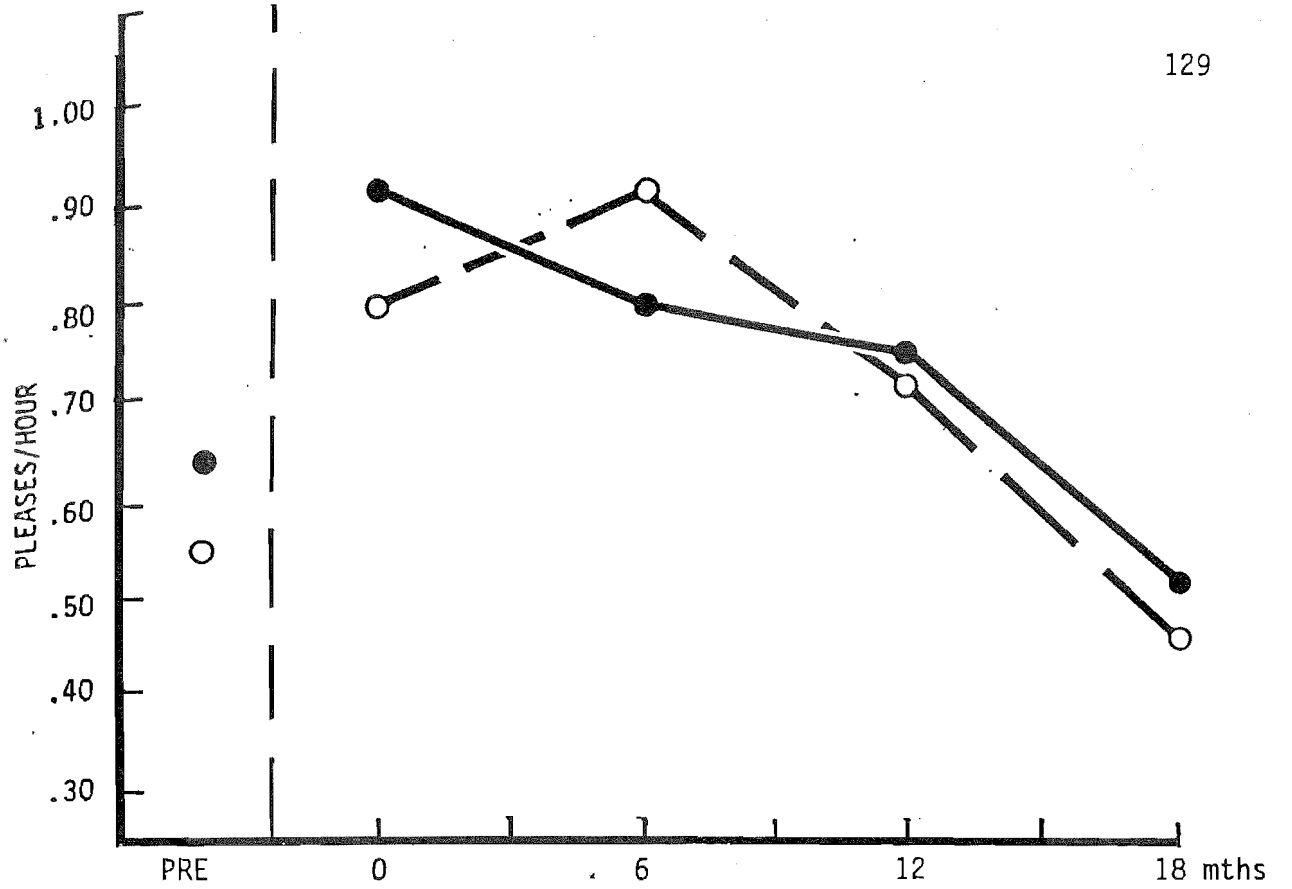


Figure 4.3. Mean number of Pleases per hour for Completer husbands and wives every six months.

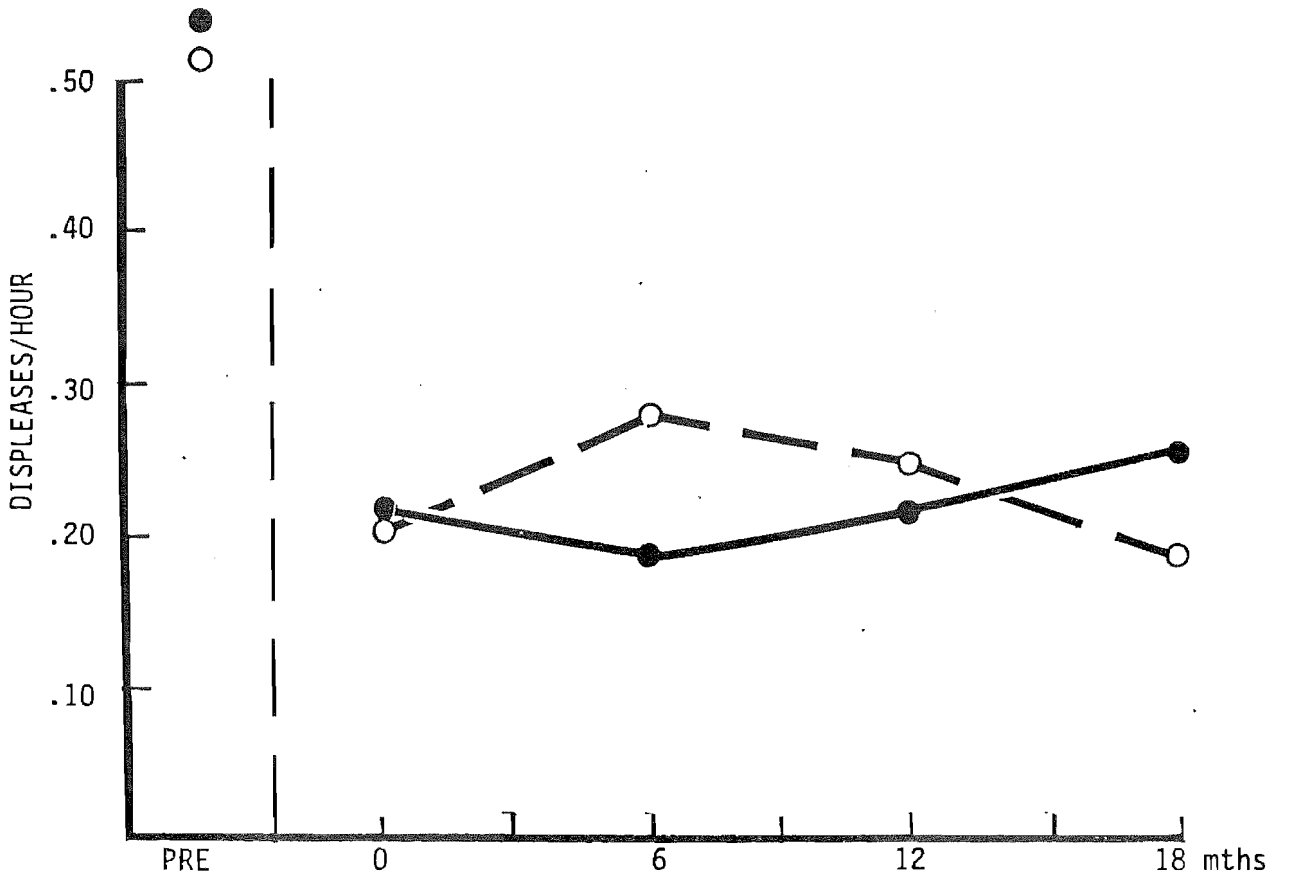


Figure 4.4. Mean number of Displeases per hour for Completer husbands and wives every six months.

HUSBAND WIFE

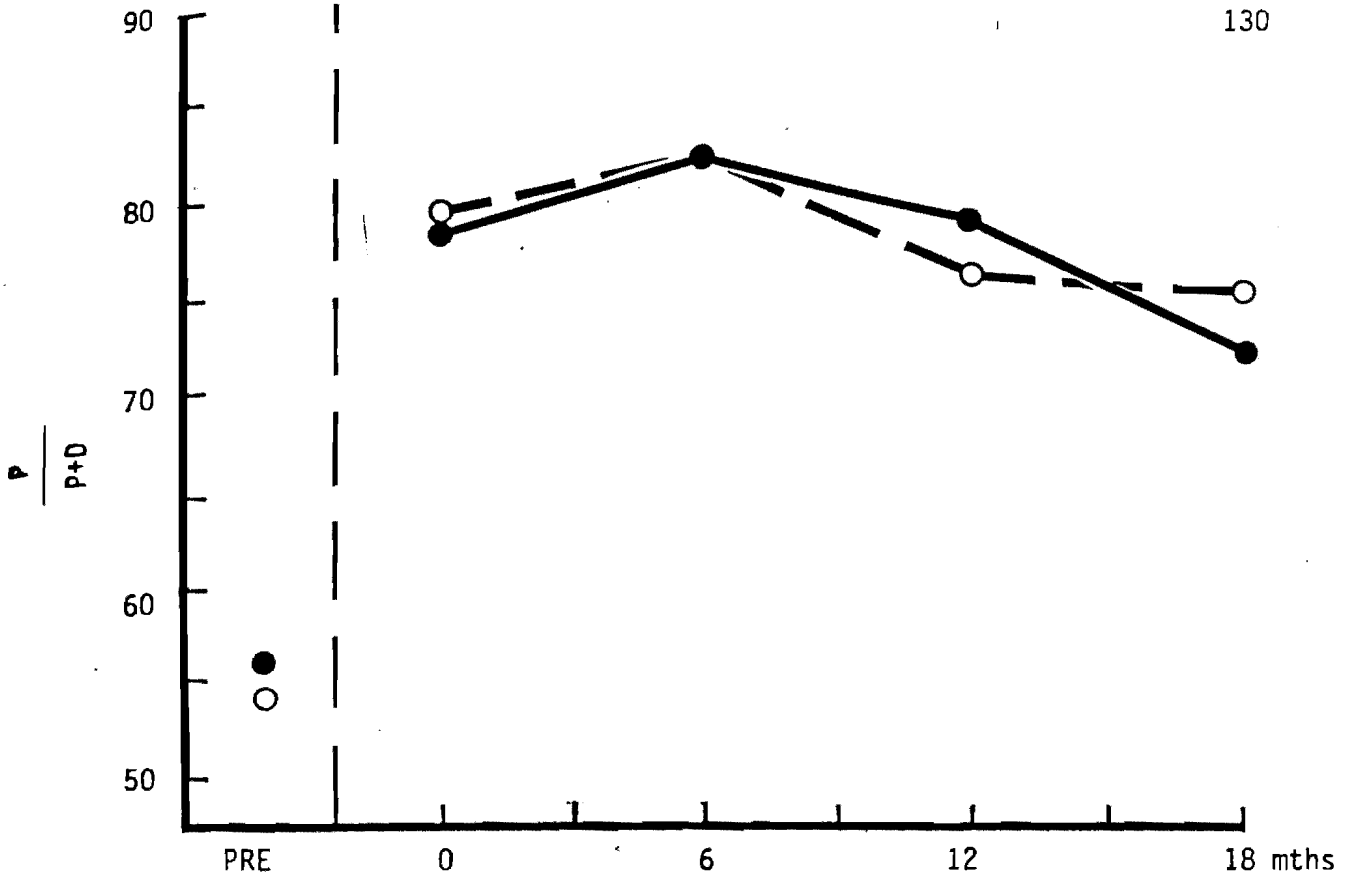


Figure 4.5. Mean Proportion Pleases for Completer husbands and wives every six months.

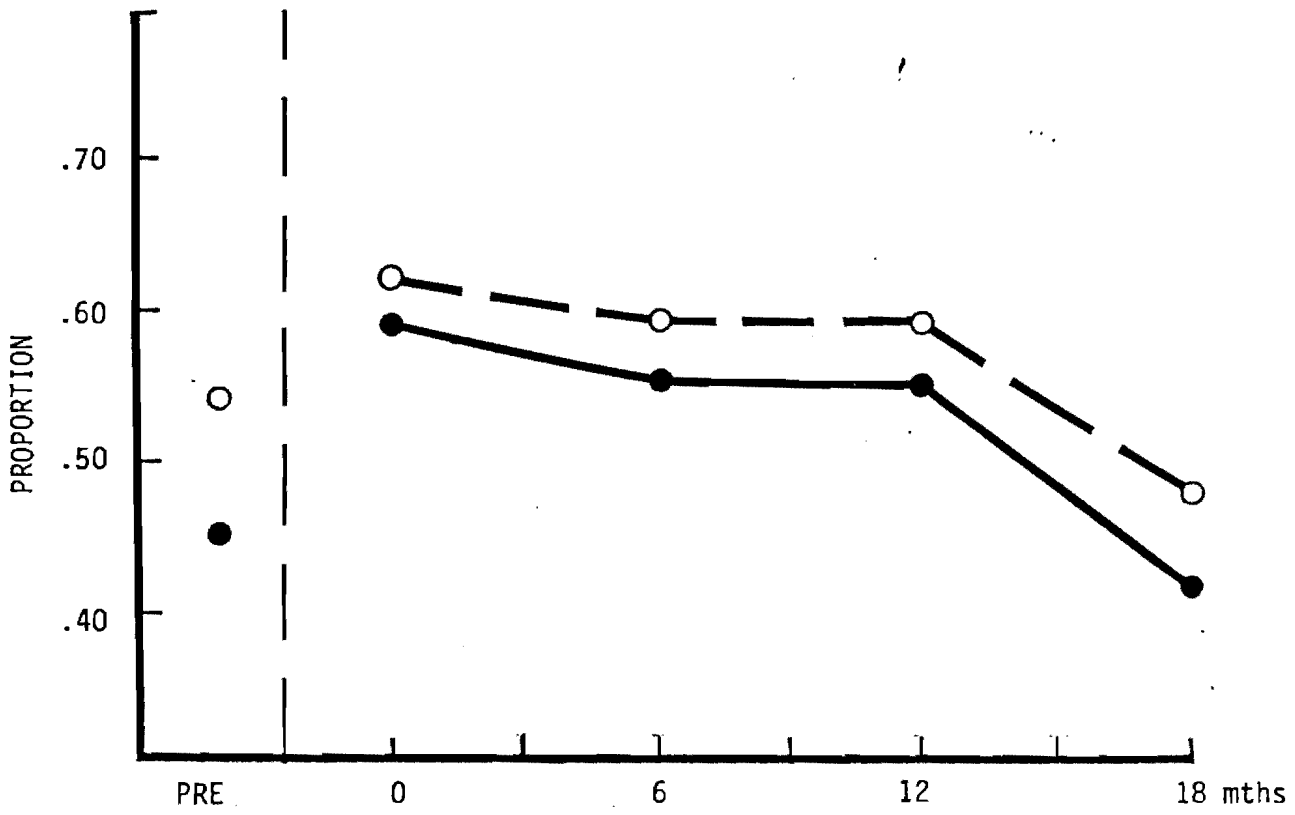


Figure 4.6. Mean Proportion Spouse-Related Activities for Completer husbands and wives every six months

Figures 4.7 and 4.8 can also be regarded as illustrating indirect measures of avoidance behaviour every six months. There was an initial increase in the mean Rewarding Time Spouse from 2.0 hours per day for wives and 2.5 hours per day for husbands pretreatment to 2.7 and 3.5 respectively posttreatment. An upward trend continued for wives to 12 months. At 18 months, gains were lost. Husbands demonstrated no clear trend posttreatment. There was an initial increase in the mean Proportion Rewarding Time Spouse for wives from .50 pretreatment to .55 posttreatment. Husbands' mean scores were unchanged (.62). There were no clear trends to 12 months. At 18 months there was a dramatic decrease in both husband and wife mean scores.

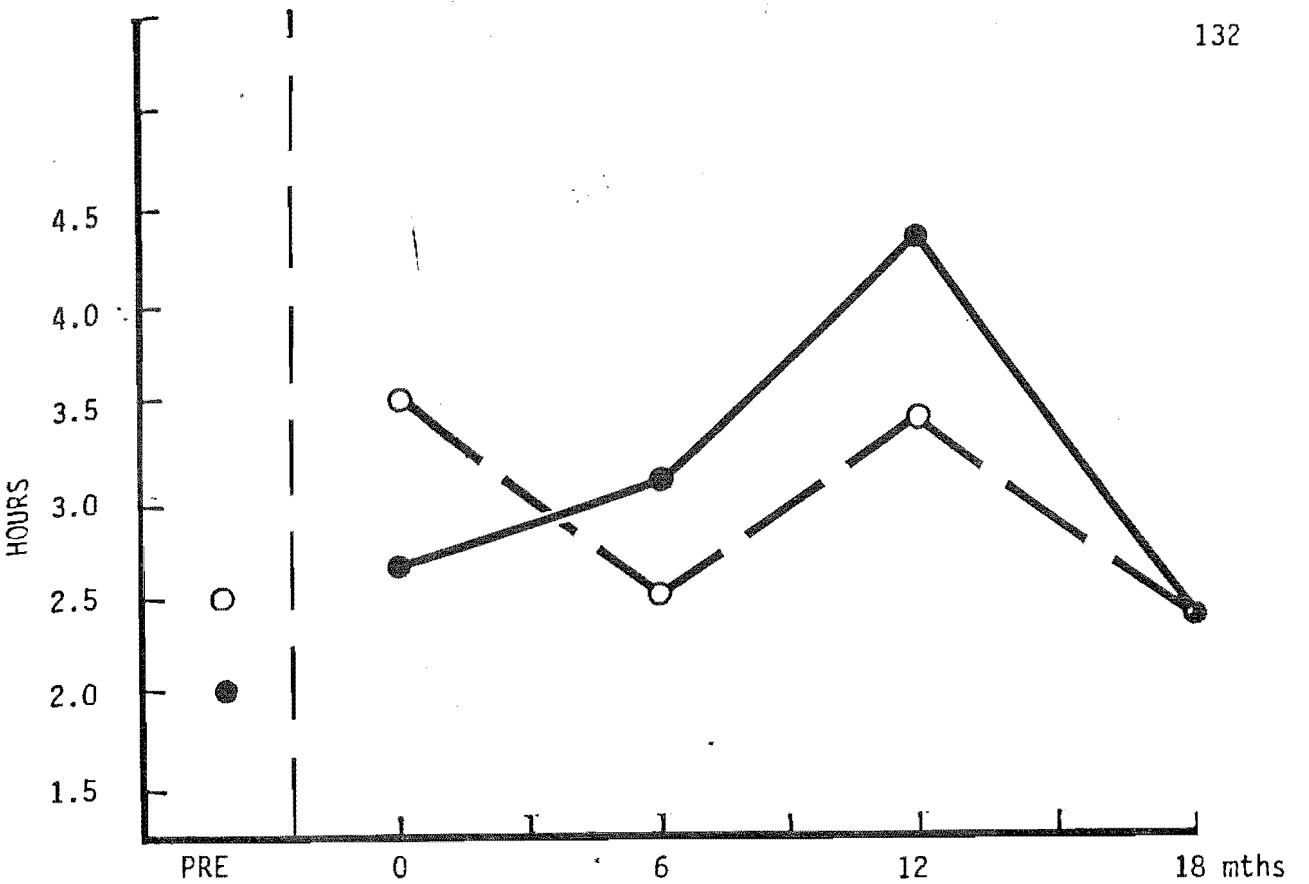


Figure 4.7. Mean number of hours per day of Rewarding Time Spouse for Completer husbands and wives every six months.

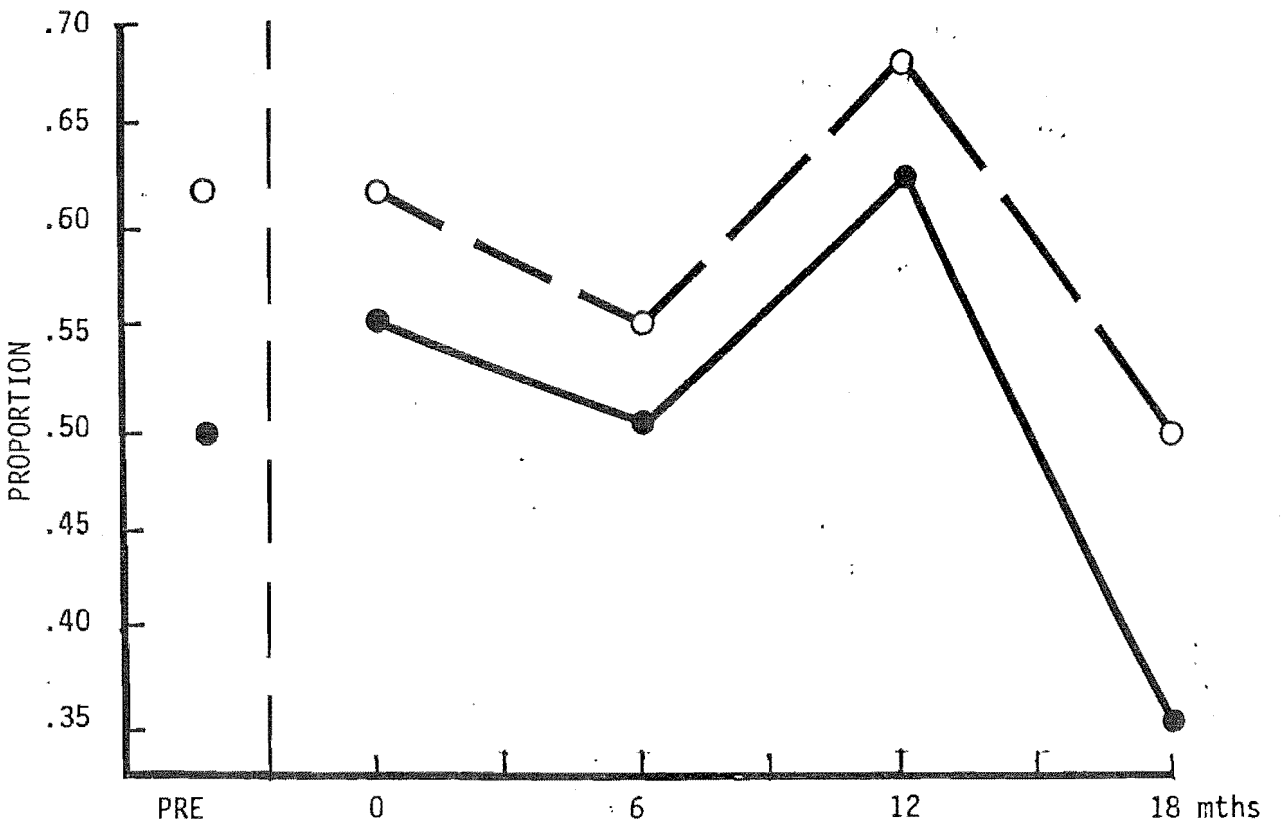


Figure 4.8. Mean Proportion Rewarding Time Spouse for Completer husbands and wives every six months.

Changes in reported symptoms of stress are shown in Figures 4.9 to 4.12. There was an initial decrease in mean Total Symptoms (Figure 4.9) from 45.6 for wives and 41.0 for husbands pretreatment to 27.3 and 26.7 posttreatment. Gains were maintained over time There was an initial decrease in mean Somatic Symptoms (Figure 4.10) from 6.9 for wives and 3.6 for husbands pretreatment to 5.4 and 2.6 respectively posttreatment. Wives' gains were maintained over time, however husbands' mean score increased dramatically at 18 months.

There was an initial decrease in mean Dysphoric Symptoms from 12.9 for wives and 13.6 for husbands pretreatment to 6.0 and 5.0 respectively posttreatment. In general, gains were maintained. There was an initial decrease in mean SRS (depression) score for husbands from 15.7 pretreatment to 9.3 posttreatment. Gains were maintained to 15 months only. There was a slight initial decrease in mean SRS score for wives from 9.6 pretreatment to 8.7 posttreatment, with no clear trend over time.

With the exception of the mean male posttreatment score, MAT mean scores remained in the distressed region over time.
In comparison with the results of Study 1, mean ACQ and Displease Rate scores remained in the nondistressed region, although ACQ mean scores at 6 months and 18 months must be considered to border on distressed levels. The indication is that training is effective in reducing two of the negative components of marital satisfaction shown in the comparative study to be important in accounting for a large part of the variance in MAT scores.

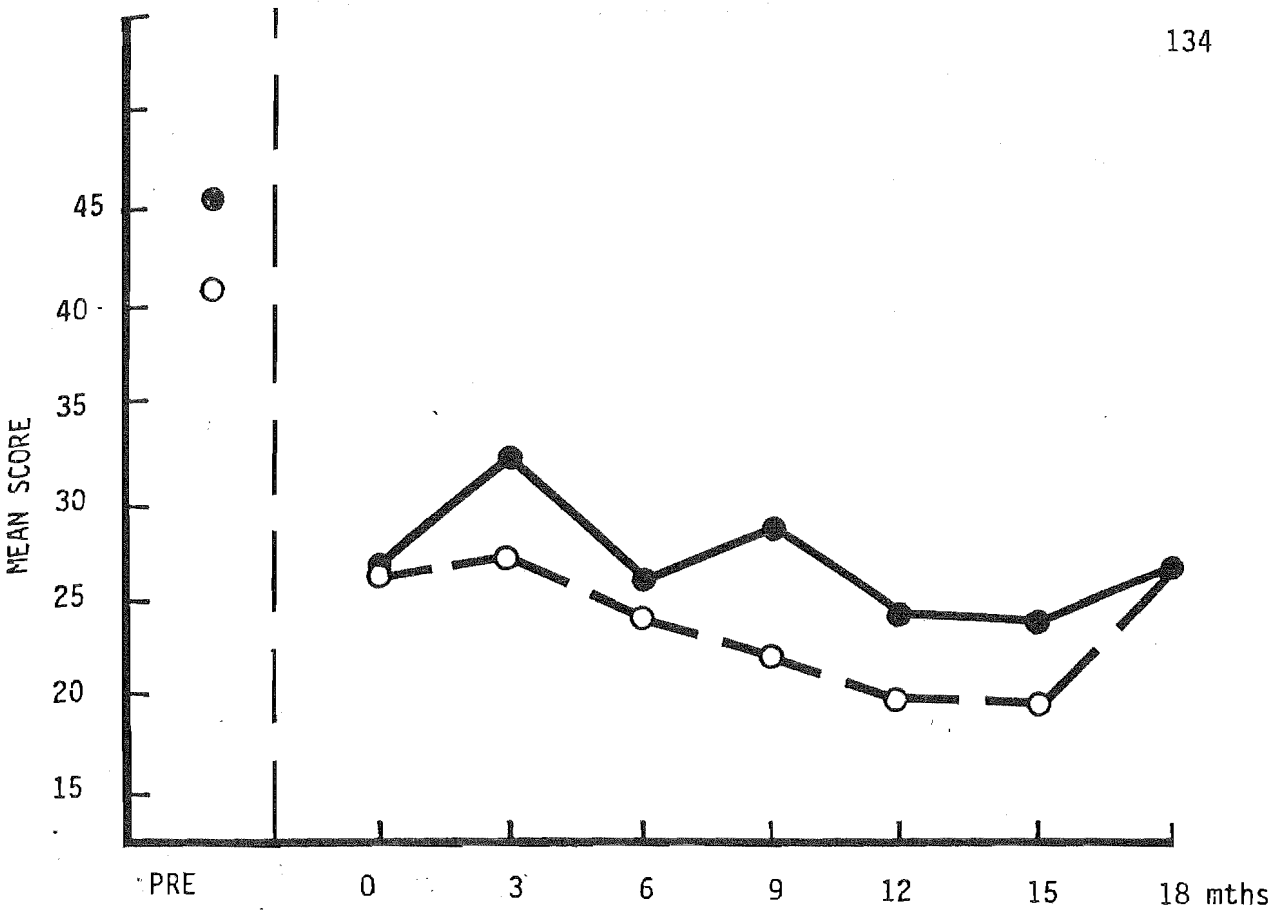


Figure 4.9. Mean Total Symptom scores for Completer husbands and wives every three months.

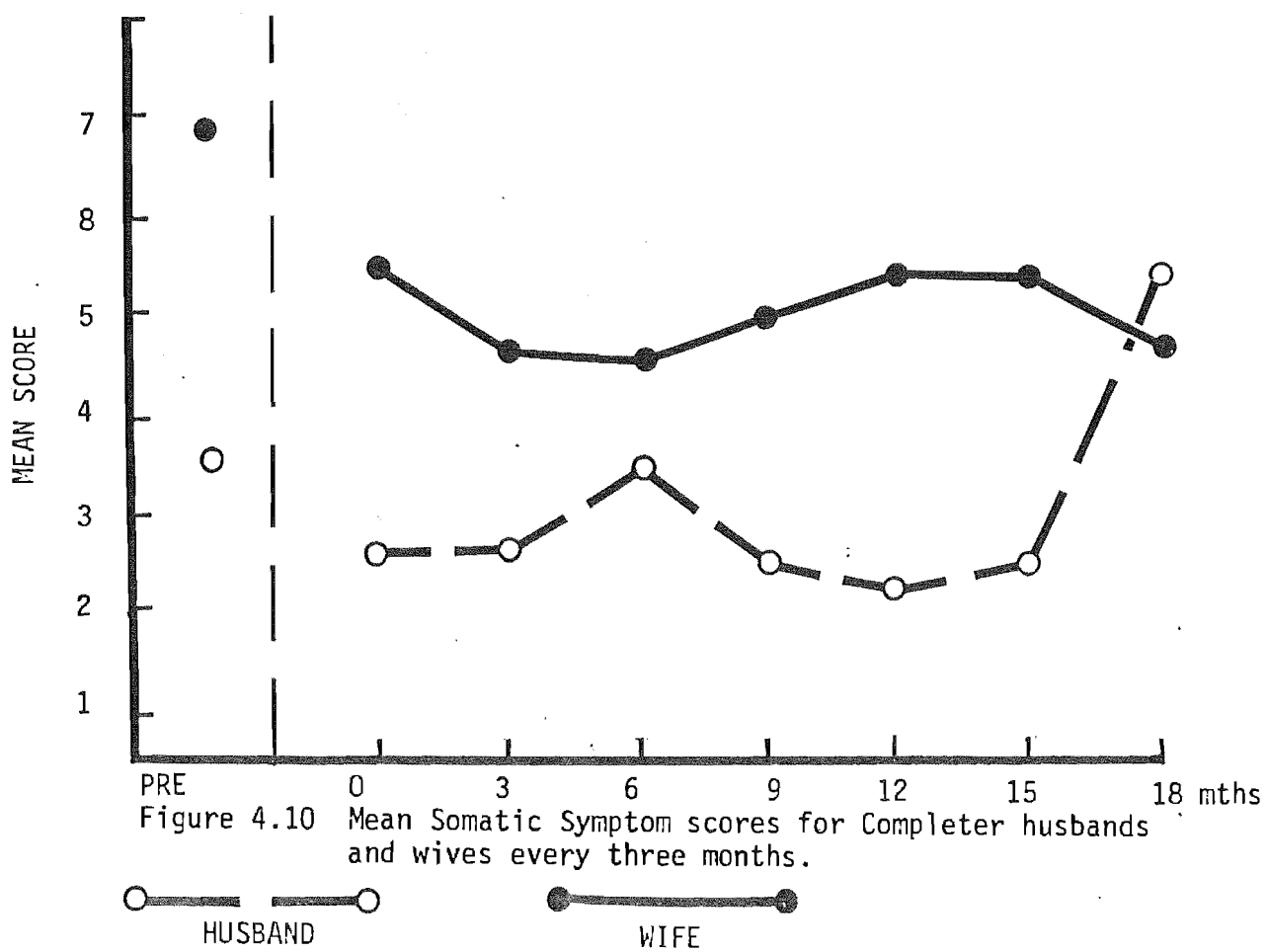


Figure 4.10 Mean Somatic Symptom scores for Completer husbands and wives every three months.

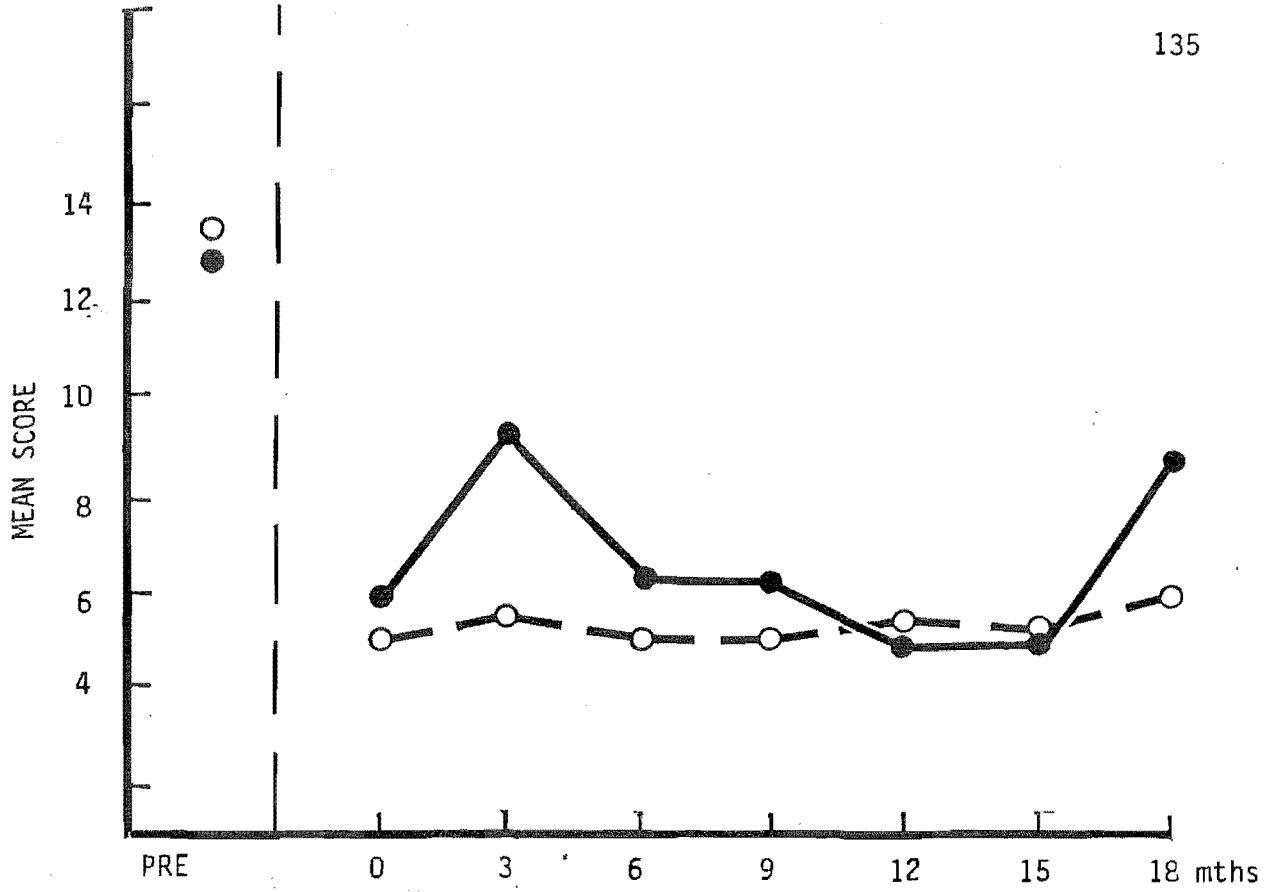


Figure 4.11. Mean Dysphoric Symptom scores for Completer husbands and wives every three months.

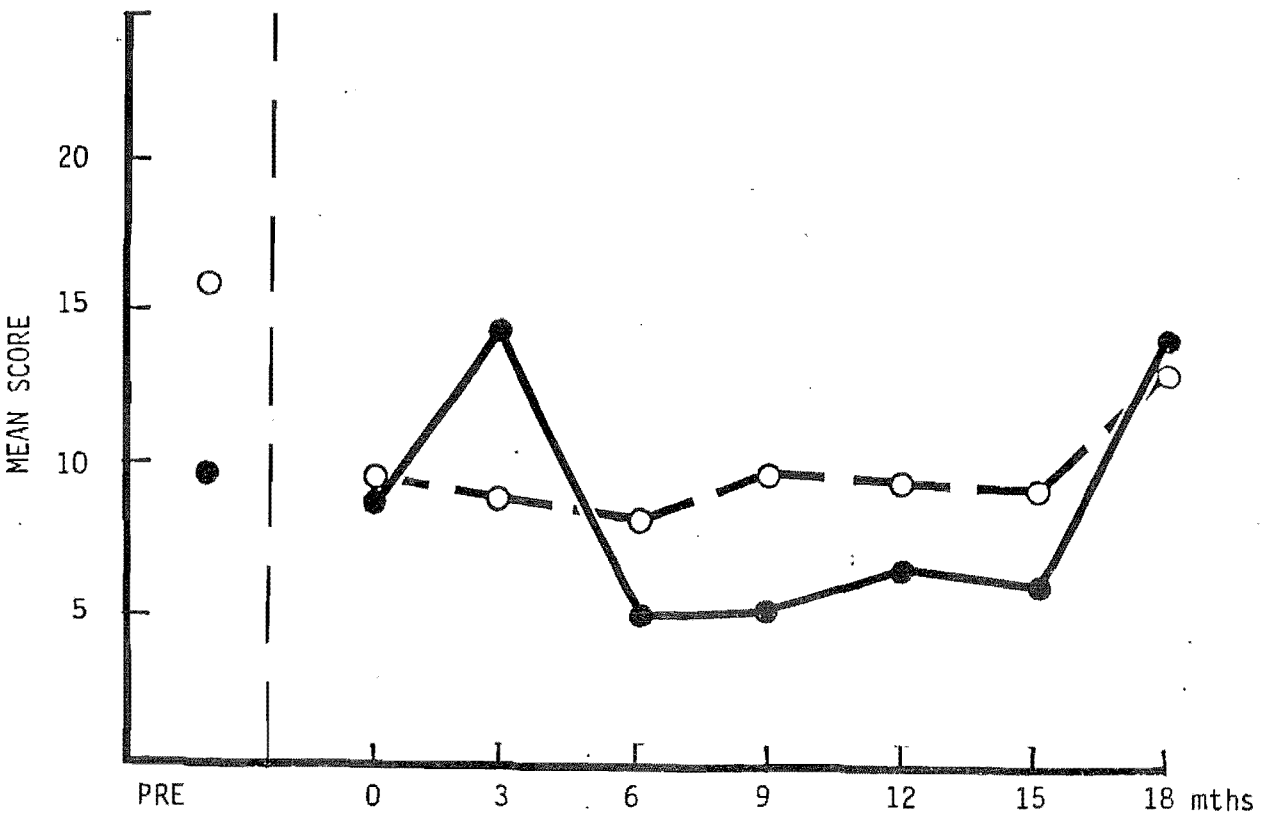


Figure 4.12. Mean Self-Rating Scale for Depression scores for Completer husbands and wives every three months.

While mean gains in Please Rate fell away over time to below baseline level, gains in Proportion Pleases, another variable found to be important in the prediction of marital satisfaction scores, were subject only to minor deterioration. Training thus appears to have a lasting effect on the pattern of reciprocity and on the reduction of negative components. That these behavioural improvements have not resulted in nondistressed levels of mean MAT scores suggests that cognitions are not as responsive to change as are behaviours, or perhaps that the pooling of data is masking other changes.

There is evidence that training had some effect on the reduction of avoidance behaviour. In this category, only the Proportion Spouse-Related Activities has been shown to predict a significant amount of variance in MAT scores. It can be seen from Figure 4.6 that mean Prop S-R scores covary with MAT scores over time. Rewarding Time Spouse and Proportion Rewarding Time Spouse, however, were found not to be powerful predictors. The erratic pattern of mean RTS and Prop RTS scores is difficult to explain.

Relationship Between Marital Satisfaction and Wellbeing

The intercorrelations between marital satisfaction, symptoms of illness, depression, and life events are shown in Table 4.6. Correlations were calculated using eight sets of data from each completing individual over a 21-month period (i.e., n=8x14). Seven scores were derived from the Marital Adjustment Test, the Symptom Checklist, the Self Rating Scale for Depression and the Life Events Questionnaire as described above.

Table 4.6

Intercorrelations of marital satisfaction with measures of physical health and emotional wellbeing (n=112)

	MAT	SCL-T	SCL-S	SCL-D	LEQ-C	LEQ-D
SCL-T	-.56**					
SCL-S	-.51**					
SCL-D	-.49**					
LEQ-C	-.16*	.16*	.04	.11		
LEQ-D	-.29**	.34**	.18*	.35**		
SRS	-.49**	.64**	.60**	.73**	.03	.22*

* $p < .05$
** $p < .005$

Coleman and Miller (1975) reported a correlation of -.38 ($p < .01$) between depression as measured by the Beck Depression Scale and the MAT. A correlation of -.49 ($p < .005$) was found in the present study. When husband and wife data was analyzed separately, Coleman and Miller found correlations of -.66 and -.25 for husbands and wives respectively, and concluded that for wives marital satisfaction and depression were essentially unrelated. Weiss and Aved (1978) found that wives' marital satisfaction and depression were related through the controlled variance in physical health status, whereas for some husbands a significant relationship between marital satisfaction and depression remained for husbands when physical health status was partialed out. The results of the present study tend to support this latter finding. An examination of Figures 4.1, 4.11 and 4.12 show that the husbands' SCL-D and SRS scores were much more a mirror image of the MAT scores than were the wives' scores.

Table 4.6 shows the significant intercorrelations between MAT scores and SCL-T (-.56), SCL-S (-.51), SCL-D (-.49), LEQ-C (-.16), LEQ-D (-.29), and SRS (-.49). While MAT scores correlate highly with symptom scores, this may be spurious as suggested by Weiss and Aved (1978). The relationship between marital satisfaction and symptoms may be mediated, in part, by variations in SRS, LEQ-C and LEQ-D scores. An investigation of intercorrelations says nothing about cause and effect. An investigation of Figures 4.9 to 4.12, however, provides evidence to suggest that marital dissatisfaction is directly related to both physical symptoms and mood. Treatment effected a decrease in Total, Somatic and Dysphoric Symptom scores for both husbands and wives, and a decrease in the depression score (SRS) for husbands. In general, wives reported more symptoms, particularly somatic symptoms than did husbands, but depression in husbands was more strongly related to marital distress.

The above results support the view that there is a relationship between marital distress and health variables. In a direct test, as advocated by Weiss and Aved (1978), marital therapy was shown to significantly reduce Total Symptoms ($p < .01$). This finding has important implications for future family health practice.

Differences Between Husbands and Wives

No significant differences were found between the scores of husbands and wives when the equivalence of the Completer and Dropout groups with respect to pretreatment scores (as shown in Table 4.3) was tested by means of a 2-way (Group X Sex) multiple analysis of variance. While the MANOVA did not indicate a significant main effect for Sex, the difference did approach significance ($p < .09$). Similarly, the MANOVAS performed to compare treatment effects between groups approached significance ($p < .11$) when sex differences were investigated.

These findings are in contrast to earlier findings of significant sex differences reported in Study 1. This may be due in part to the differences in sample size.

While no main effect for Sex was found, significant univariate tests for the MAT were found on those MANOVAS performed to test the equivalence of the Completer and Dropout groups, and to test the treatment effect for the Completer group. Within the battery of measures used, the MAT appears to stand out predominantly as an attitude measure when compared to most of the other measures which are behaviourally-based. The discrepancy between husband and wife MAT scores appears to represent a difference in perception regarding the marriage and to be an enduring feature of marital distress. It is interesting, therefore, to observe that, following training, the discrepancy between husband and wife scores disappeared with the passage of time (Figure 4.1). One explanation for this finding is that training increased husbands' awareness of and cognitive responsiveness to dysfunction within the marriage.

As would be expected from behaviour exchange theory, mean scores for Please Rate, Displease Rate, and Proportion Pleases did not show much variation between husbands and wives (Figures 4.3 to 4.5). Discrepancies in the Please Rate following training may be a function of novelty. Training emphasized the exchange of *Pleases* and it can be assumed that immediately following training *Pleases* would be more likely to be exchanged noncontingently. Over time, however, exchange rates would be expected to equalize.

The relative importance of the spouse as a companion can be seen from Figures 4.6 and 4.8. As in Study 1, husbands in the present study of distressed marriages appeared to be more dependent upon their wives for shared activities and rewarding time than vice versa.

Following training, differences of the same order between husband and wife scores remained. This finding suggests that one reason for the greater distress suffered by separated and divorced husbands as compared to wives is that husbands have fewer alternative sources of rewarding activities at the time of separation, and that this is an additional source of stress.

Interpretation of Rewarding Time Spouse scores is more difficult. While there was a marked increase in wives' scores, there was no significant trend in the husbands' scores. Feedback at the group debriefing, however, indicated that wives do not count time with spouse as rewarding unless something positive is happening, whereas husbands count time with spouse as rewarding as long as nothing negative is happening. This finding suggests that the sex differences observed in MAT scores have a similar basis, and that husbands and wives have different expectations of marriage. Ongoing behaviours will, therefore, be compared with different sets of expectations, and it is important that this type of discrepancy be taken into account by therapists.

The present results strongly suggest that the effect of marital distress on health is more marked in wives than it is in husbands, while husbands appear to report more depression. These results are consistent with those of Coleman and Miller (1975) and Weiss and Aved (1978). Though both husbands and wives are adversely affected by marital distress, it appears that husbands are less likely to report high levels of marital dissatisfaction as indicated by MAT scores.

The effect of training on physical and emotional wellbeing as measured by the Symptom Checklist and the Self-Rating Scale for Depression was most marked on the mean Total Symptoms score (Figure 4.9).

This was one of the most durable gains reported. Other durable gains reported were decreases in conflict, decreases in the Displease Rate, and increases in the Proportion Pleases. The last three variables have all been shown to be significant in accounting for variance in MAT scores, and it would be expected that with durable improvements in these variables, mean MAT scores would be seen to demonstrate durable treatment gains. While the increased satisfaction reported by wives posttreatment was maintained with the passage of time, this was not the case with husbands.

The least durable of the gains was demonstrated by the Please Rate, in which there was a steady decline over time. Couples appeared to enjoy monitoring and reporting on *Pleases* received and it is assumed that the task was initially both novel and rewarding. With the passage of time, however, many of the behaviours that had once been counted as *Pleases* could be expected to be taken for granted. Gains in variables related to wellbeing tended to be maintained, while gains in variables related to avoidance behaviour tended not to be.

In Study 1, a significant main effect for Sex was found but, whereas couples in the present study demonstrated the same pattern of sex differences, they were not statistically significant. This is not to say, however, that sex differences are not clinically significant. The evidence suggests that culturally-based sex differences in attitudes toward marriage play an important part in the evolution of marital distress and should be taken into account by both theorists and clinicians.

Behavioural Observations in the Laboratory

Table 4.7 shows the means and standard deviations of five variables derived from the MICS for those couples completing the 18-month follow-up, prior to treatment and at 0,6,12 and 18 months posttreatment.

Table 4.7

Means and standard deviations of five MICS variables for Completer husbands and wives (repeated measures).

Time			PS	PV	PNV	NV	NNV
Pre (n=7)	F	$\bar{x}$	0.56	0.44	1.49	3.00	0.89
		S.D.	0.40	0.37	0.51	1.98	0.72
	M	$\bar{x}$	0.56	0.40	1.68	2.37	0.61
		S.D.	0.39	0.30	0.53	1.36	0.34
Post (n=7)	F	$\bar{x}$	0.56	0.58	2.97	0.49	0.36
		S.D.	0.45	0.30	0.86	0.33	0.81
	M	$\bar{x}$	0.83	0.40	2.70	0.17	0.18
		S.D.	0.33	0.18	1.14	0.16	0.21
6 mths (n=6)	F	$\bar{x}$	0.68	0.34	3.66	0.87	0.42
		S.D.	0.54	0.21	2.27	1.65	0.48
	M	$\bar{x}$	0.53	0.44	2.53	1.14	0.22
		S.D.	0.63	0.41	0.83	1.43	0.21
12 mths (n=6)	F	$\bar{x}$	0.85	0.27	2.58	1.59	0.45
		S.D.	0.65	0.30	1.15	2.24	0.69
	M	$\bar{x}$	0.55	0.50	2.38	0.76	0.49
		S.D.	0.40	0.34	0.98	1.59	0.47
18 mths (n=5)	F	$\bar{x}$	1.02	0.36	3.58	0.20	0.38
		S.D.	0.59	0.26	0.93	0.21	0.44
	M	$\bar{x}$	0.86	0.62	2.68	0.12	0.32
		S.D.	0.54	0.33	0.93	0.22	0.39

In order to investigate the immediate impact of training, a 2-way (Treatment x Sex) multiple analysis of variance was performed. Pretreatment scores were compared with posttreatment scores.

The MANOVA showed a significant main effect for Treatment, $F(5,20)=7.71$, $p<.001$.

No significant main effect for Sex ($p < .52$) and no Treatment X Sex interactions were found. A summary of the univariate F ratios for main effect on Treatment and the standardized discriminant function coefficients are shown in Table 4.8.

Table 4.8

Univariate F ratios and standardized discriminant function coefficients of those MICS variables entered into multivariate analysis of variance. Main effect for Treatment (Completer couples).

Variable	F	Standardized Discriminant Function Coefficient
Problem Solving	0.80	-0.283
Positive Verbal	0.43	-0.021
Positive Nonverbal	17.19**	0.419
Negative Verbal	25.49**	-0.884
Negative Nonverbal	4.76*	-0.400
* $p < .05$		Multiple R = .81
** $p < .001$		$F(5,20) = 7.71$, $p < .001$

Negative Verbal and Positive Nonverbal were found to be the two most powerful discriminating variables. An examination of Table 4.7 reveals that, over time, gains in these two variables were maintained.

While all couples completed five videotapes, not all tapes were technically acceptable for coding. Hence, at 6 and 12 months, n=6, and 18 months, n=5. Observation of the uncoded tapes indicated that, were it possible to include data from these tapes in the analysis of means, there would be no significant change in the trend over time. Results suggest that those communication skills related to good listening and to substitution of "pinpointing" for "putdowns" became a permanent feature of the couples' repertoire. That is not to say that these skills were used continuously. It may be that the video camera acted as a stimulus for the use of these skills.

process data acquired at follow-up meetings and at debriefing suggested that while skills were used in the natural enviornment, couples often lapsed into old communication styles, and that these distructive episodes had a marked effect on questionnaire scores.

PART 2: INDIVIDUAL COUPLES DATA

Dropout Couples

Couples D1 to D6 dropped out of the research study at various points in time. Each couple is discussed in terms of individual and relationshp characteristics. Where available pre- and posttraining scores are given for the Marital Adjustment Test, the Areas of Change Questionnaire and the Symptom Checklist (Total Symptoms). These three measures were chosen as being particularly representative of therapeutic change. A significant change on the ACQ score appears to be related to maintenance of treatment gains, and improvement in Total Symptoms has been shown to be one of the most durable of changes following treatment.

Couple D1. Three pre-and posttreatment scores are shown in Table 4.9 for Dropout Couple D1.

Table 4.9

Pre- and posttreatment scores on three variables from the CRESST battery of measures for Dropout Couple D1.

Variable		Pretreatment	Posttreatment
MAT	F	62	94
	M	101	115
ACQ		27	12
SCL-T	F	50	27
	M	12	16

The husband was extremely passive and the wife was highly aggressive. The husband became much more assertive during training, and both partners rated the course highly.

The wife, however, would not co-operate in collecting data. Maintenance of gains must be questionable given the long history of maladaptive patterns of interaction.

Couple D2. Three pre- and posttreatment scores are shown in Table 4.10 for Dropout Couple D2.

Table 4.10

Pre- and posttreatment scores on three variables from the CRESST battery of measures for Dropout Couple D2.

Variable		Pretreatment	Posttreatment
MAT	F	31	113
	M	78	50
ACQ		17	20
SCL-T	F	113	41
	M	27	30

Couple D2 had been married for four years and had two children. The wife was 20 years old, suffered from anxiety and migraine, and had been referred for psychiatric treatment. She was highly dependent, eager to please and had an extremely low self-image. The couple's eldest child exhibited behaviour problems. The husband was highly critical of his wife, and was unable to talk about or even to identify feelings. He controlled most of the resources of the marriage. Following treatment the wife was delighted with the changes in her husband. He, however, perceived himself to be in a loss situation and left his wife. By then she was sufficiently assertive and confident to be able to take responsibility for her life and for her children. The husband was seen as having major personality problems and was offered individual therapy, but refused. While his scores represent a deterioration following therapy, the prognosis for the other three members of the family was good.

This was an example of a disturbed family member (the husband) coping adequately but at the expense of at least two others.

Couple D3. Three pre-and posttreatment scores are shown in Table 4.11 for Dropout Couple D3.

Table 4.11

Pre- and posttreatment scores on three variables from the CRESST battery of measures for Dropout Couple D3.

Variable		Pretreatment	Posttreatment
MAT	F	87	119
	M	84	94
ACQ		31	19
SCL	F	26	25
	M	56	40

Both husband and wife had been married before. The husband was extremely insecure, and intolerant of his wife's attention to any other man. Early on in the relationship, the wife had been able to express her feelings, but the husband's major complaint was that his wife would not express her feelings about anything and this was making him tense. It became obvious that his habitual response to his wife's expression of feeling was to punish her because, given his interpretation based on his low self-image, what she had to say was often aversive to him. In the business world, he had been well rewarded for agression, and aggressive responses were difficult for him to reduce, even in a close relationship. Good progress had been made at the completion of treatment, but the husband was diagnosed as having metastatic cancer and the coupled dropped out.

Couple D4. Three pre- and posttreatment scores are shown in Table 4.12 for Couple D4.

Table 4.12

Pre- and posttreatment scores on three variables from the CRESST battery of measures for Dropout Couple D4.

Variable		Pretreatment	Posttreatment
MAT	F	65	81
	M	68	109
ACQ		23	8
SCL	F	53	29
	M	24	33

Couple D4 had been married one year. The husband was a perfectionist, unable to provide approval for either himself or his wife. The wife's self confidence had been undermined by her husband's constant criticism, lack of approval, and inability to show affection. The husband was also unable to express or identify feelings. The treatment was successful in teaching the husband to provide approval to his wife and to discriminate some feelings, but was not successful in bringing about fundamental changes in his attitude toward himself. The couple reported being happy with the results, but later the wife decided she wanted to separate. This appears to be another example of the wife gaining self confidence and becoming assertive following training. Her career, which would have been sacrificed in order to make the move her husband wanted, was perceived as being more rewarding than her marriage. The husband refused individual therapy.

Couple D5. Three pre- and posttreatment scores are shown in Table 4.13 for Dropout Couple D5.

Table 4.13

Pre- and posttreatment scores on three variables from the CRESST battery of measures for Dropout Couple D5.

Variable		Pretreatment	Posttreatment
MAT	F	39	
	M	79	99
ACQ		29	
SCL	F	27	
	M	42	40

Husband and wife D5 were middleaged and committed to preserving their marriage because of religious considerations. During his youth, the husband had received approval from his mother for bizarre behaviours. Continued bizarre behaviours earned him a lot of community attention, but no approval from his wife. There were major sexual problems within the marriage, and it soon became obvious that the wife had no commitment to improving the relationship when she realized that improvement included increasing positive behaviour toward her husband. This, she was afraid, might be misinterpreted as encouraging sexual advances. The only gains made by this couple were made by the husband, who rated the programme highly. He learned to moderate his dogmatic coercive responses to the opinions of others. No posttreatment data was received from the wife.

Couple D6. Three pre- and posttreatment scores are shown in Table 4.14 for Couple D6.

Table 4.14

Pre- and posttreatment scores on three variables from the CRESST battery of measures for Dropout Couple D6.

Variable		Pretreatment	Posttreatment
MAT	F	41	80
	M	75	99
ACQ		36	28
SCL	F	72	56
	M	44	35

Husband and wife D6 were both approximately 40 years old, with three preadolescent children. The eldest child was displaying major behavioural problems. The husband displayed many compulsive behaviours, was highly aggressive and critical. The wife, Asian-born, was highly anxious and compliant, but motivated to improve the marriage. The husband, however, subverted all attempts to modify his behaviour by angrily and temporarily refusing to engage in those behaviours that were to have been the target of modification. This, after he had agreed with the co-therapists to allow them to be monitored. As more information came to hand regarding the husband's violence and deviant sexual demands, the wife was seen separately for assertion training and divorce counselling. Contact was lost after she had left her husband. Group training was highly successful in teaching the wife to express her feelings. Previously her expression of feelings had been severely punished to the point that she initially reported being too terrified to attempt such a communication exercise within the group. She was helped to recognize the absurdity of her earlier belief that, when she was perfect enough, everything would be alright with the marriage.

Her husband's early background was marked by a lack of warmth and approval. He learned to try to be perfect in order to gain his parents' approval and, after marrying, demanded that his wife be perfect also. Marriage to a woman who had been brought up to believe that her place was to serve her husband, served to reinforce many of his worst behaviours and shaped up others.

Summary. Wives D2, D4 and D6 with highly critical husbands reported particularly high Total Symptoms scores, 113, 72, and 53 respectively, while their husbands apparently suffered minimally, with SCL-T scores of 27, 44 and 24 respectively. If success in marital therapy is defined as the preservation of marriage, then these cases, ending in separation, must be regarded as failures. However, the training was successful in teaching assertive behaviour to the wives, appropriate parenting skills, and the recognition that their own self-image need not reflect the critical messages with which they were being bombarded by their inadequately socialized husbands. Two of the husbands were offered further treatment which they refused. Husband D6 was in individual therapy with a psychodynamic therapist.

Completer Couples

Figures 4.13 to 4.19 illustrate changes in husband and wife scores over time for the seven completing couples. As a reference, MAT scores were plotted for each individual, while ACQ scores were plotted because of the importance of the measure. Since response to training varied from couple to couple, additional scores were plotted for each couple on the basis of responsiveness to training. Scores on measures which added little to the demonstration of relationship changes and/or difficulties were not plotted. These results are, however, available in Appendix II.

Couple D7. Results for Husband and Wife D7 are shown in Figure 4.13. The relationship that had developed was one of aggressive wife - passive husband. The husband had trained his wife to nag him about almost everything, household tasks, parenting, recreational time, affectional and sexual behaviours. The husband resented his wife's nagging and attempted to avoid both his responsibilities and the company of his wife. The wife was overly demanding of others and herself, and suffered from social anxiety, depression and a poor self-image. As a child she had been subjected to a great deal of criticism from parents and siblings. Her husband's neglect increased her depression and made her more demanding. In turn, her demanding increased her husband's involvement with outside activities. His increased involvement with others increased her resentment of him.

During treatment, the wife frequently arrived looking and sounding depressed. She was slow to respond to training, being highly suspicious of any request to provide positive behaviour to her husband. Initially, the husband was unable to identify feelings or express affection. He did, however, respond well to training, but his new constructive behaviours were often under threat of punishment from his wife's depressed responses.

At debriefing, the couple reported that they were particularly happy and felt that the training had been successful. While they reported experiencing more good times than bad, Figures 4.13a, b, c, and d show that training was only partially successful. Figure 4.13d shows that there was an improvement in the pattern of behaviour exchange. It was also successful in establishing fundamental changes in husband D7, who learned to accurately identify his own and others' feelings.

He reported at debriefing that this was a painful process to undergo. He reallocated his time, and became very supportive of his wife when she was depressed.

Training was not successful in establishing fundamental changes in the wife's cognitive set. While the tone of the relationship changed as evidenced by the Proportion Pleases scores (Figure 4.13d), the wife's continued (although modified) perfectionist demands were reflected in the high ACQ scores (Figure 4.13b) and in her SCL-T scores (Figure 4.13c). She was one of the few individuals whose SCL-T score did not fall following training. She appeared to be continually stressed by her own negative cognitions. At 6 months and 18 months she was severely depressed, and this was reflected in low MAT scores. MICS scores (Appendix II) indicate the extent to which this couple vascillated between old and new communication styles. Within this relationship, depression appeared to be a major contributor to marital distress, and further therapy for Wife D7 would have been appropriate.

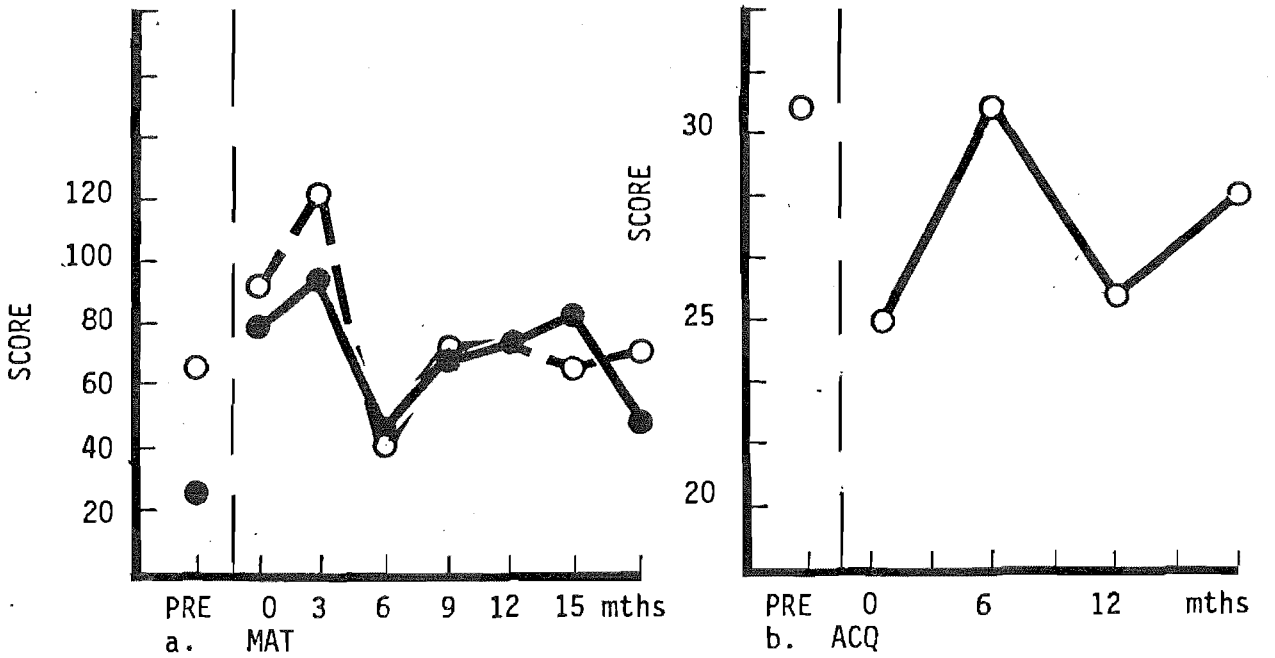
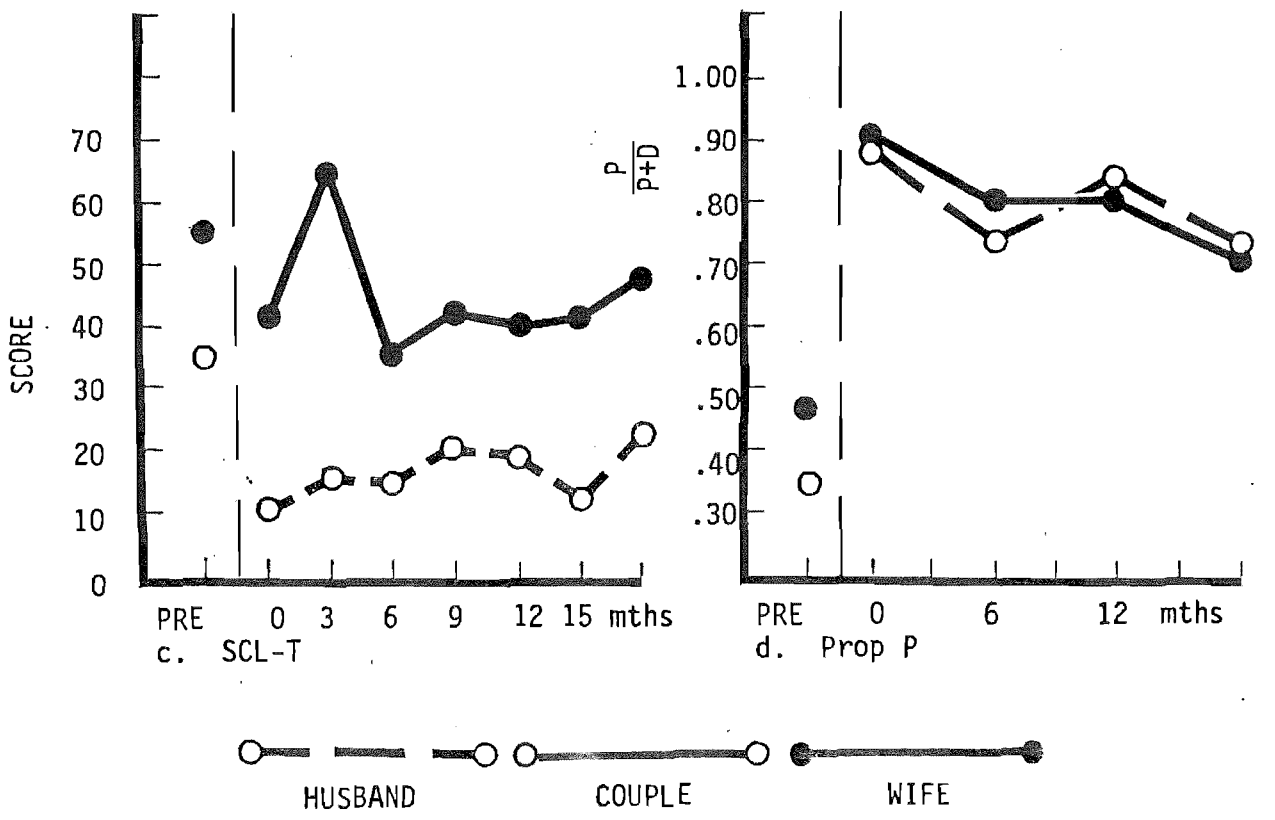


Figure 4.13. Marital Adjustment Test, Areas of Change Questionnaire Symptom Checklist and Spouse Observation Checklist scores for Couple D7 over a 18-month follow-up.



Couple D8. Results for Husband and Wife D8 are shown in Figure 4.14. Both partners had withdrawn from each other. Wife D8 was passive and suffering from agoraphobia. She was afraid to go out in case she had to use the toilet. She was inorgasmic and had an extremely low self-image. Her major complaint about her husband was that he did not do his share around the house, particularly with respect to the children. Husband D8 also suffered a low self-image. He had been continually sexually repulsed by his wife and felt extremely rejected. He found the affirmation he needed in outside activities, and was frequently away from the family during the evening and at weekend. They had received therapy from two previous sources.

During training, wife D8 practised relaxation exercises and *in vivo* desensitization as her behaviour management programme, while the husband learned child management skills.

At debriefing, the couple reported that the training had been successful and they were convinced that they would stay together. The 18-month data, however, suggested that the relationship was about to explode. They explained that this had been a time of considerable external stress. Wife D8 was ill and her husband was attempting to look after her and the children, and to paint the exterior of the house. During this time, the wife's unmarried sister and her child dropped in unexpectedly and stayed on uninvited. Husband D8 disliked and disapproved of his sister-in-law and her lifestyle. Relations between husband and wife became strained, and both were depressed. The husband's reaction to these events was also reflected in his SCL-T score of 50 following a mean of 17.1 for the preceeding seven assessments (see Appendix II).

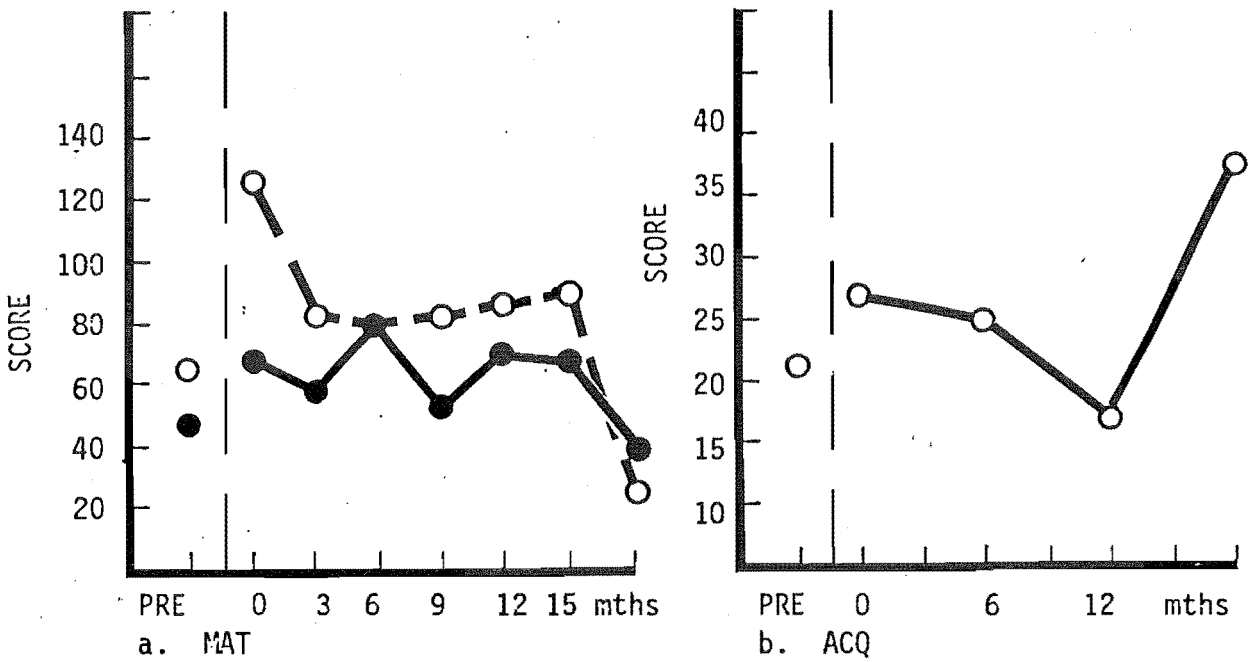
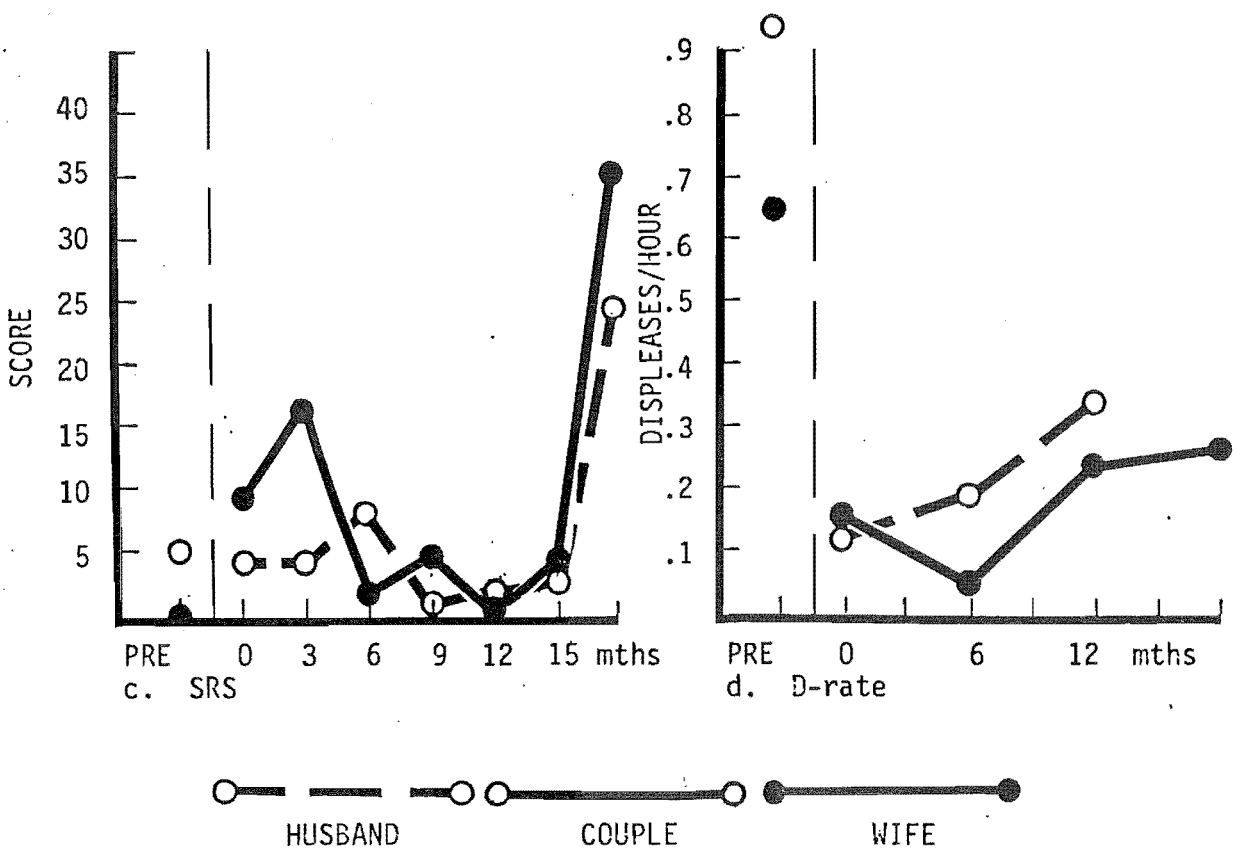


Figure 4.14. Marital Adjustment Test, Areas of Change Questionnaire, Self-Rating Scale for Depression and Spouse Observation Checklist scores for Couple D8 over an 18-month follow-up.



The training was successful in helping the wife to overcome social anxieties and anxieties related to the outdoors. Her ability to express thoughts and feelings improved greatly. The husband reallocated his time and became less demanding sexually. Sexual relations improved, and more enjoyment was reported by wife D8. MICS scores (Appendix II) suggest that gains in Positive Nonverbal and Negative Verbal were maintained over time. The 18-month observational data were, however, inconsistent with the self-report data collected two weeks previously.

Over time, *Displeases* remained low (Figure 4.14d), but conflicts remained high (Figure 4.14b). In working with a husband and wife who both have a low self-image, one is working with a very difficult combination, because every issue is a self-esteem issue. Both partners would have benefitted from further cognitive therapy. The extraordinary ACQ score at 18 months appeared to bear little relation to reality, but it usefully demonstrates the global influence of mood.

Couple D9. Results for Husband and Wife D9 are shown in Figure 4.15. The relationship that had developed was one of aggressive wife - aggressive husband. The wife had an extremely low self-image. She was a housewife, married to a professional man. Perceiving herself to be inferior to him, every suggestion he made was interpreted as a putdown. The husband also had an extremely low self-image, and was unable to express feelings or demonstrate affection appropriately. His authoritarian upbringing was continually at odds with his wife's more egalitarian philosophy. He saw himself as the unloved odd job man. Suggestions made by his wife were interpreted as putdowns. Each partner attempted to escape from their own bad feelings by punishing the other.

Since children were caught in the middle of this turmoil, with each parent attempting to use them to punish the other, child management skills were taught during training. Furthermore, work with this couple focused on changing the stimulus control for the aggressive response, and the uncaring response. Both partners resisted being the first to do anything positive for the other.

At debriefing the couple reported that they had found the training useful, with particular reference to "pinpointing", Executive Sessions, and child management. The wife's extremely low MAT score at 9 months (Figure 4.15a) followed a move to a new house, and the husband's absence overseas. She felt lonely and inadequate. It was, however, evident that negative self statements continued to mediate aggressive responses. Further cognitive therapy would have been appropriate, but was declined.

The training appears to have had very little effect on this couple. There was no real improvement in the conflict score as can be seen from Figure 4.15b. The husband's SCL-T and SRS scores (Figures 4.15c and d, respectively) indicate that the situation continued to be extremely stressful. MICS data (Appendix II) indicates that this couple vascillated between old and new communication styles. The author suspects, however, that new communication skills were rarely used in the natural environment. Information that should have been available to the therapist prior to training was deliberately withheld. Had it been available, it could have been used to increase the desire to change.

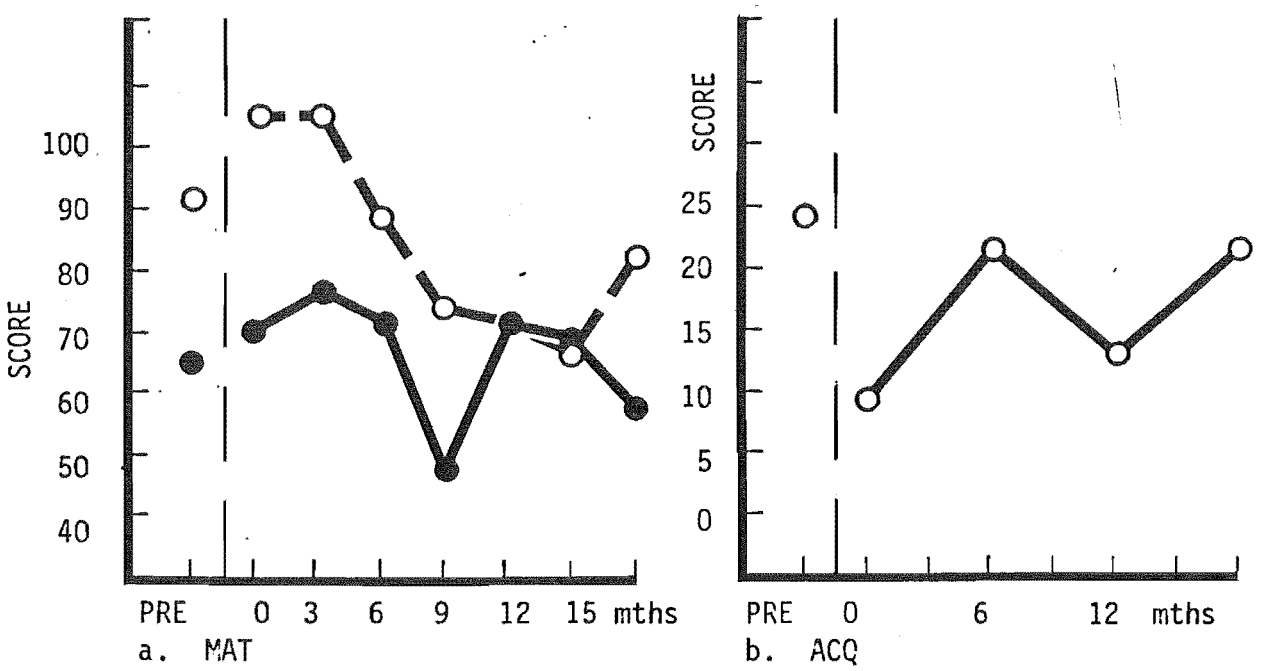
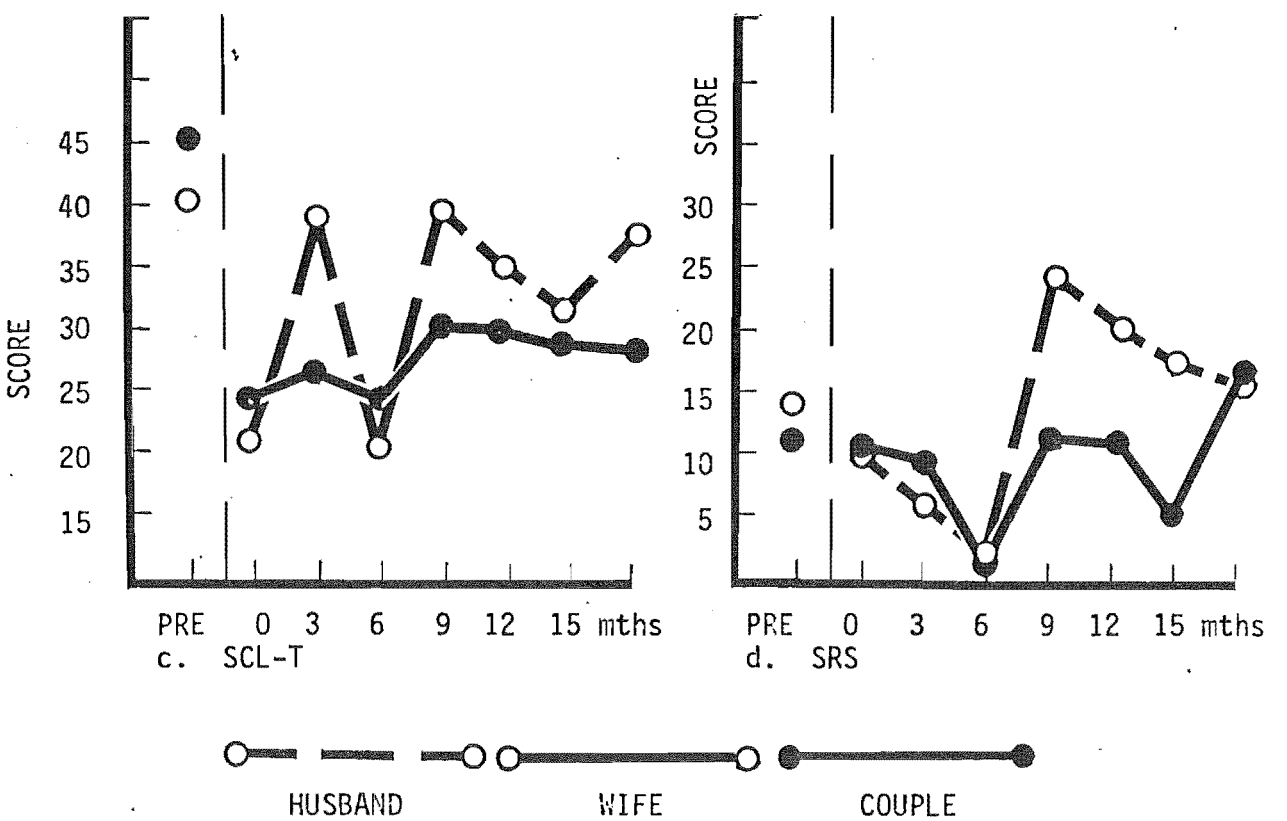


Figure 4.15. Marital Adjustment Test, Areas of Change Questionnaire, Symptom Checklist and Self-Rating Scale for Depression scores for Couple D9 over an 18-month follow-up.



Couple D10. Results for Husband and Wife D10 are shown in Figure 4.16. The relationship had apparently been satisfying to the wife, until she found out that for years her husband had been living a double life. While he appeared to be a dependable family man, he was also have an affair with his wife's best friend. The wife was somewhat tense, overcontrolled, and overcontrolling, whereas the mistress was much more spontaneous. During most of the marriage Wife D10 had been inorgasmic, and had suffered a considerable amount of illness, all of which resulted in putting distance between the partners. They had received therapy as a couple and the husband had received individual therapy for depression.

During training, the couple worked hard in the group, and at home. They were both committed to saving their marriage. The husband was given cognitive exercises to do as his behaviour management homework. This satisfied the wife's need to see her husband "do something", thus facilitating her positive behaviours toward him.

At debriefing, the couple expressed satisfaction with the training. At the 12-month follow-up session, Wife D10 had objected to their being labelled a "distressed couple" and, for her, returning to the group reminded her of painful memories.

This was a highly intelligent couple and they conscienciously put the training into practice despite their negative feelings. There was an immediate impact on behaviour. The conflict score and the Displease Rate were reduced and a low level was maintained as shown in Figure 4.16b and d. respectively. This followed the particularly high pretreatment D-rate reported by Wife D10.

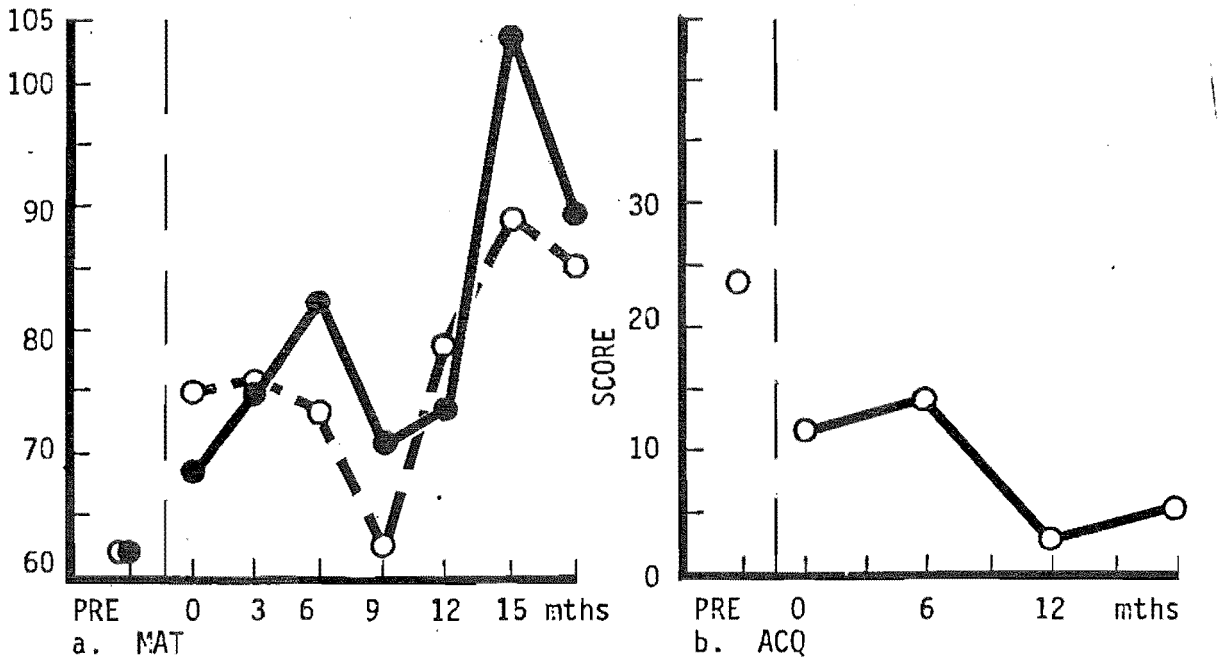
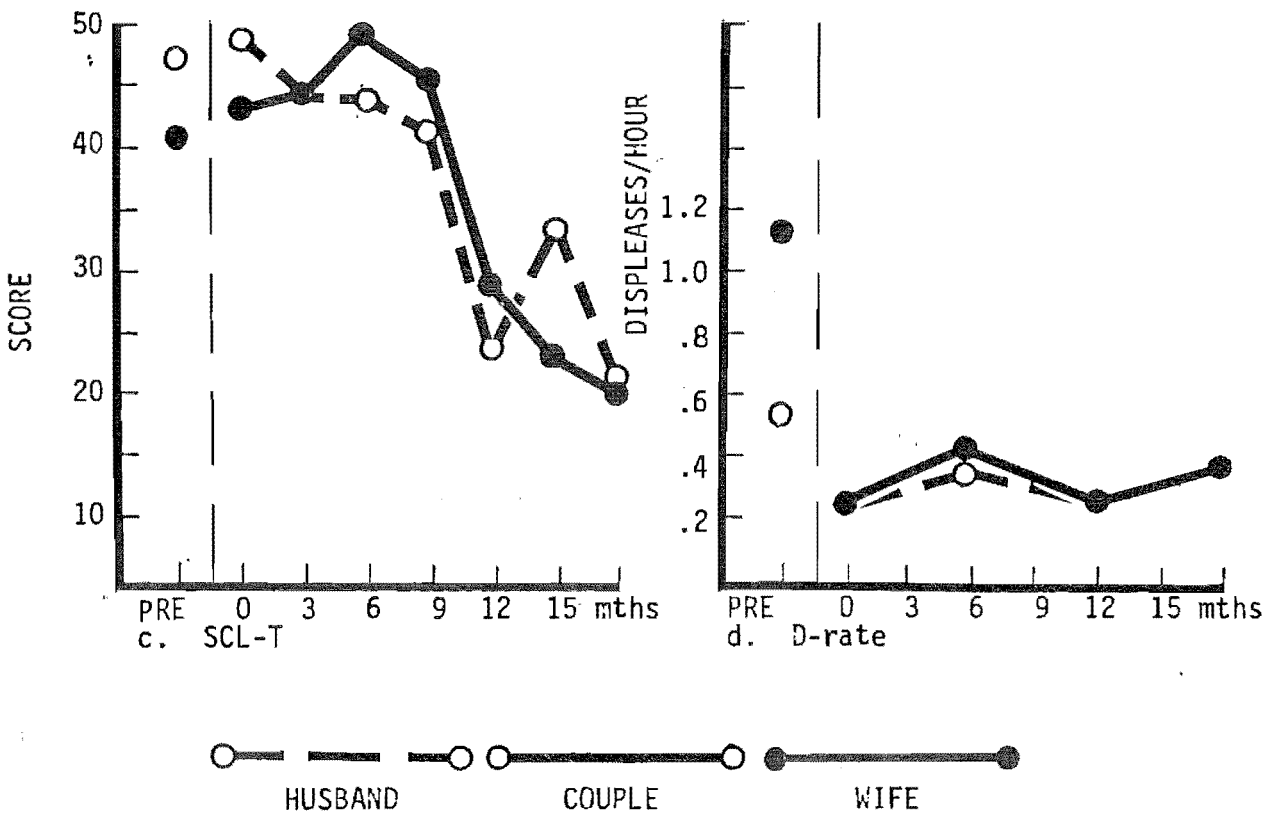


Figure 4.16. Marital Adjustment Test, Areas of Change Questionnaire, Symptom Checklist and Spouse Observation Checklist scores for Couple D10 over an 18-month follow-up.



MICS data (Appendix II) show training as having had an immediate impact on Positive Nonverbal and Negative Verbal. These gains were maintained over time. There was, however, no impact on MAT or SCL-T scores for the first nine months following training (Figures 4.16a and c respectively). At 12 months, there was a considerable decrease in SCL-T scores for both. In addition, the husband's SRS score was down to 17, the lowest reading over the previous year (see Appendix II). A general improvement in MAT scores was noted from that time onward.

Couple D11. Results from Husband and Wife D11 are shown in Figure 4.17. Both partners had been married previously. Wife D11 had a mother who provided approval only for perfection. In comparison to her mother, Wife D11 believed herself to be a failure. She had difficulty finishing anything she started, and became hostile when criticized. Her sexual desire was low, though she was not inorgasmic. The husband had no obvious personality problems. He had felt unloved within the marriage, and had been having an affair.

The first few sessions of training were very difficult due to the wife's low commitment to the marriage. The prognosis seemed poor, the wife demonstrating little ability to reinforce her husband's positive behaviours. Because the husband was turned off by what he termed his wife's "self-hate", her behaviour management exercise involved the accomplishment of tasks likely to improve her self-image. The husband learned to handle his wife's negative thinking more constructively.

At debriefing, the couple reported that they had been able to systematically apply what they were taught to their own relationship, to parenting, and other relationship tasks. In doing so, they became increasingly confident and the relationship gains were maintained.

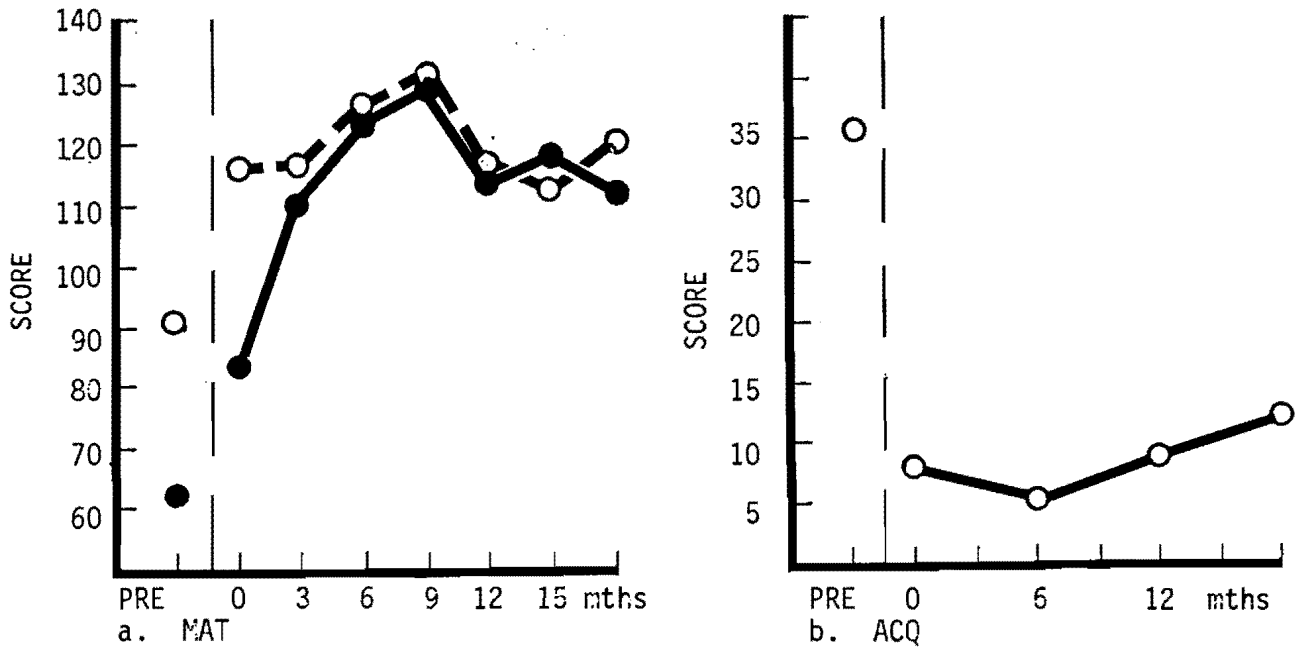
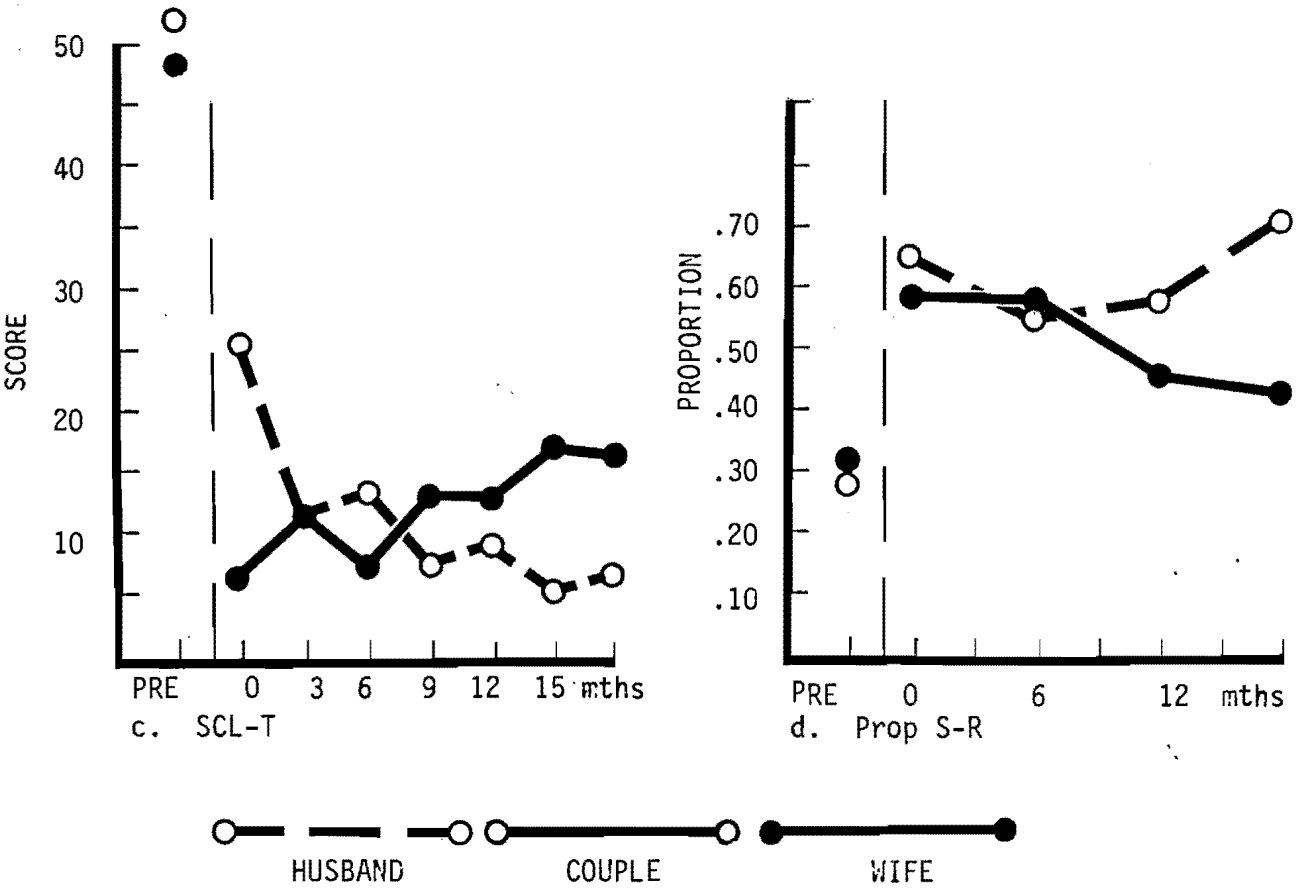


Figure 4.17. Marital Adjustment Test, Areas of Change Questionnaire, Symptoms Checklist and Inventory of Rewarding Activities scores for Couple D11 over an 18-month follow-up.



The couple appeared to have found the "real spark" which the wife had initially said had never existed for them.

Immediate posttraining effects were significant, with a considerable decrease in SCL-T and ACQ scores as shown in Figures 4.17c and b respectively. These gains were maintained. Even though Wife D11 was pregnant during the last six months of follow-up, her SCL-T score remained well below baseline level (Figure 4.17c). The husband was no longer avoiding his wife's company. His Prop S-R score increased from .28 pretreatment to .70 at 18 months (Figure 4.17d). His consumption of alcohol had decreased considerably over that time, as indicated by answers to SCL-T items. MICS data (Appendix II) indicate that posttreatment gains in Negative Verbal were maintained over time, and that for the most part Positive Nonverbal scores were maintained over time at a higher than baseline level.

Couple D12. Results from Husband and Wife D12 are shown in Figure 4.18. This was the only student couple in the group. They were both in their 20's and had no children. Wife D12 was highly anxious, with low sexual desire and poor body image. She had previously received individual therapy without experiencing any amelioration of her difficulties. The husband had no obvious personality problems, but was highly critical of excess body weight.

During treatment, Wife D12 practised relaxation exercises. The husband was taught to say approving things about his wife's body and to provide body massage. The wife's sexual desire increased. Husband D12 talked loudly and enthusiastically, but did not realize that this intimidated his wife.

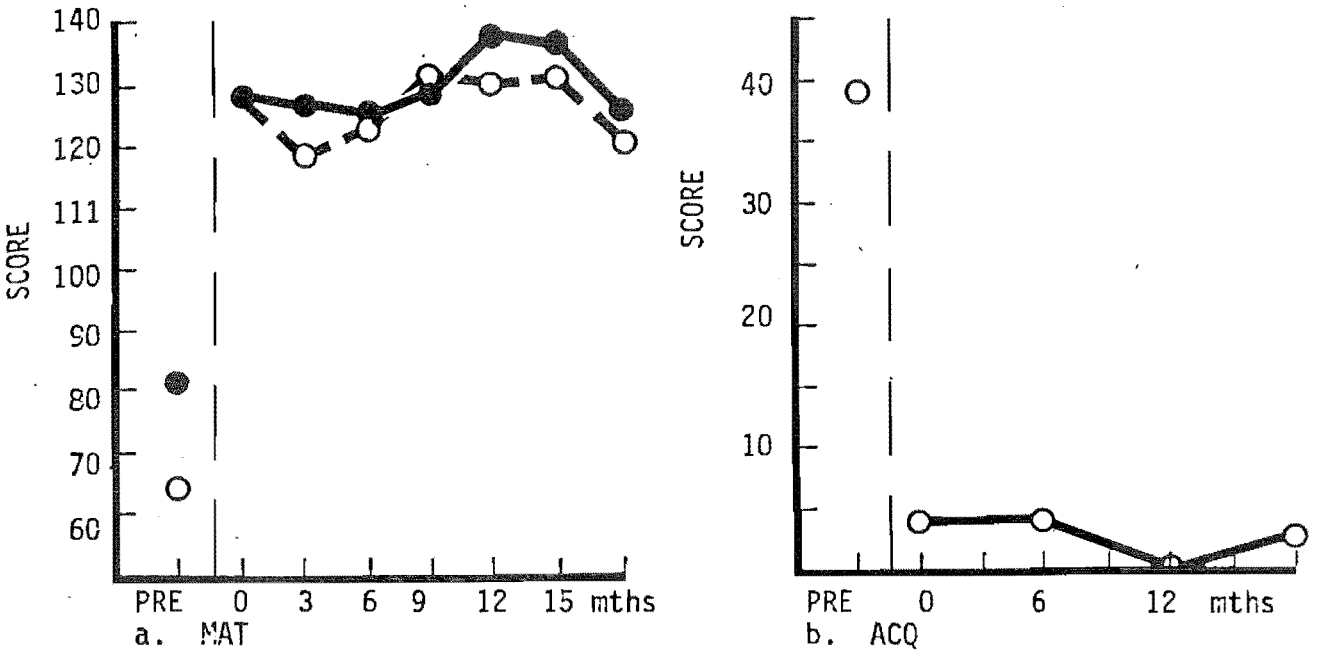
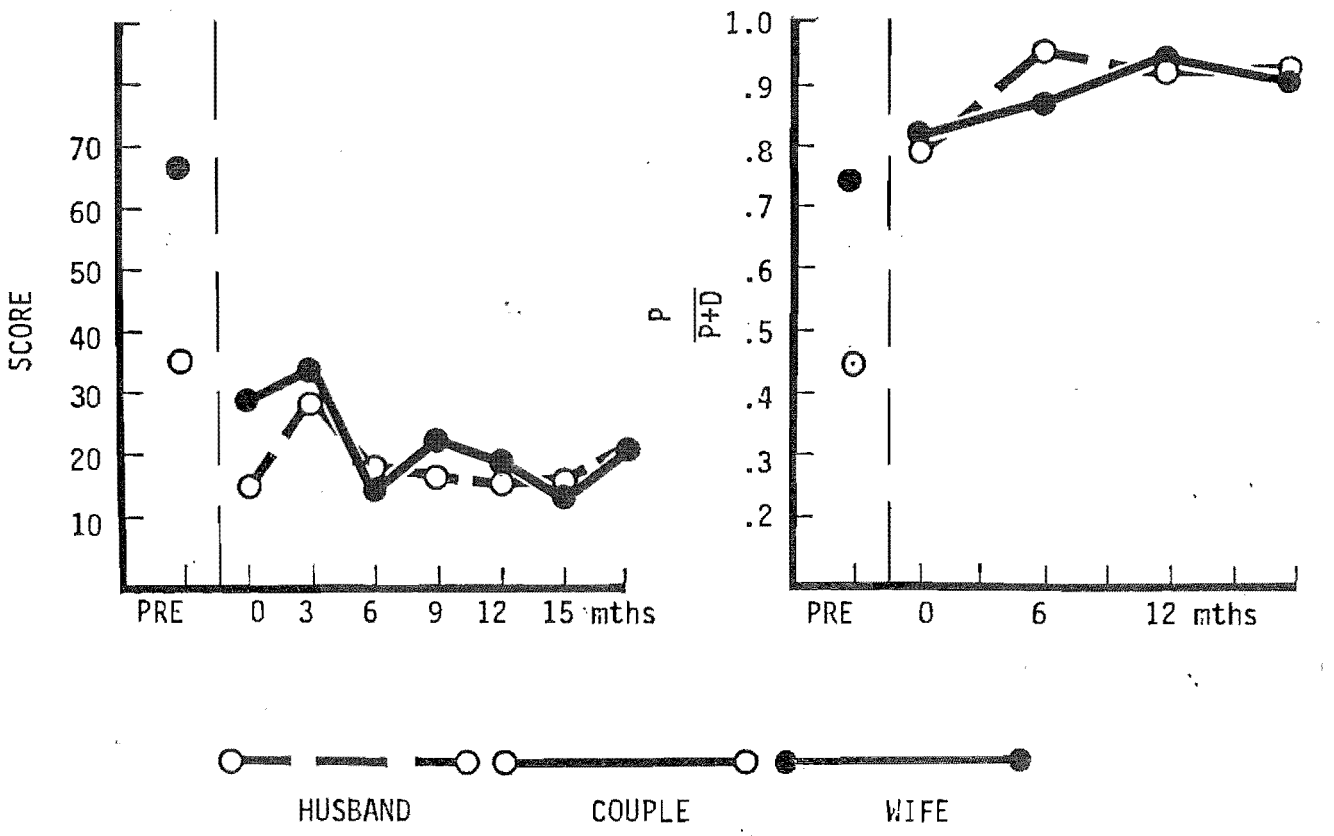


Figure 4.18. Marital Adjustment Test, Areas of Change Questionnaire, Symptom Checklist and Spouse Observation Checklist scores for Couple D12 over an 18-month follow-up.



She was taught to cue him when his voice became too loud. This behaviour was quickly modified. Because the wife suffered so much anxiety in expressing feelings, some of the exercises had to be done away from the group. Her fear was evident. She was reduced to tears, and had to be given relaxation instructions before proceeding. Husband D12 was highly supportive and not threatened by his wife's expression of feelings.

At debriefing, the couple expressed satisfaction with the results of training. Figures 4.18a, b, c and d, indicate that training had both an immediate and enduring impact on this relationship.

Couple D13. Results from Husband and Wife D13 are shown in Figure 4.19. Couple D13 was a working class couple with four children. The pattern that had developed between them was one of aggressive wife - passive husband. Wife D13 was unable to express feelings. She had low sexual desire, and her affectional needs appeared to be satisfied by her children. Each was breastfed to the age of 18 months or more, and allowed to sleep in the "family bed". These practices served effectively to minimize sexual contact. Both partners had come from socially deprived backgrounds. The wife was aggressive and critical, while the husband was passive, and depressive to the point of being suicidal. He had an extremely poor self-image, suffered chronic pain, and was a heavy consumer of analgesics. He had previously been admitted to a psychiatric hospital for addiction to prescription drugs.

During training, Husband D13 practised relaxation exercises and pain control. He began to spend more time with the children in return for body massage. His wife was taught to reduce her putdown messages and increase approval.

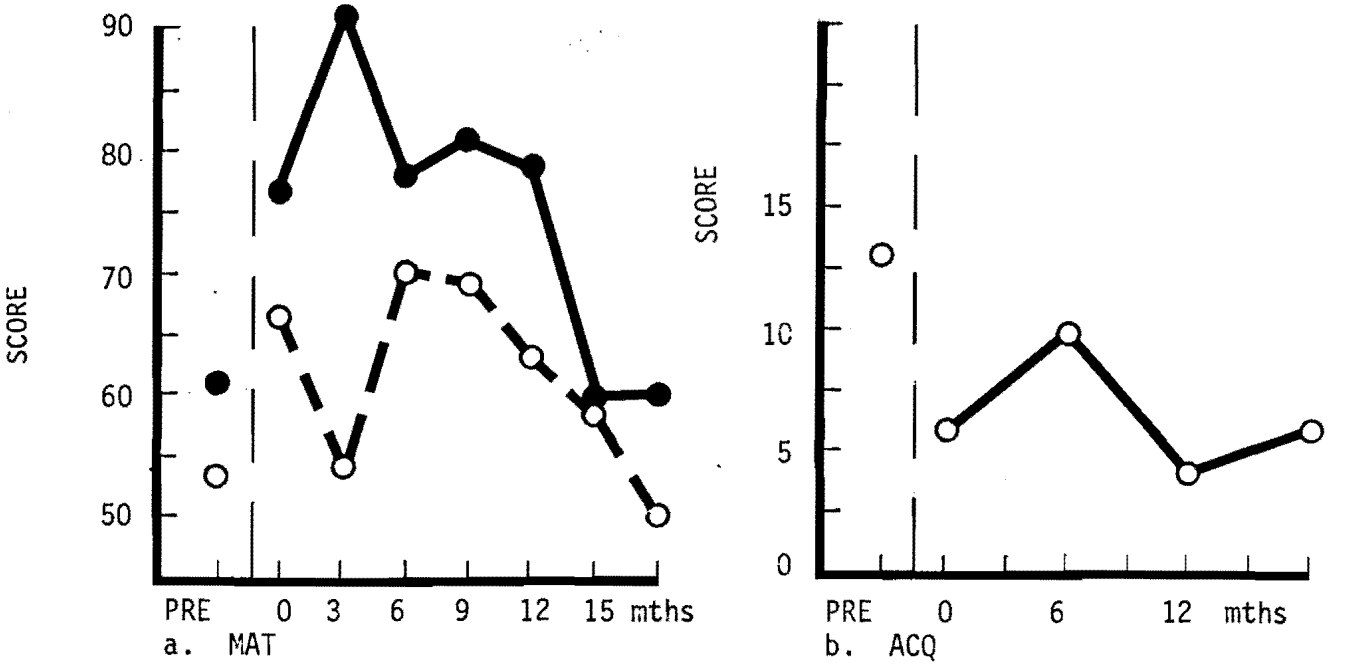
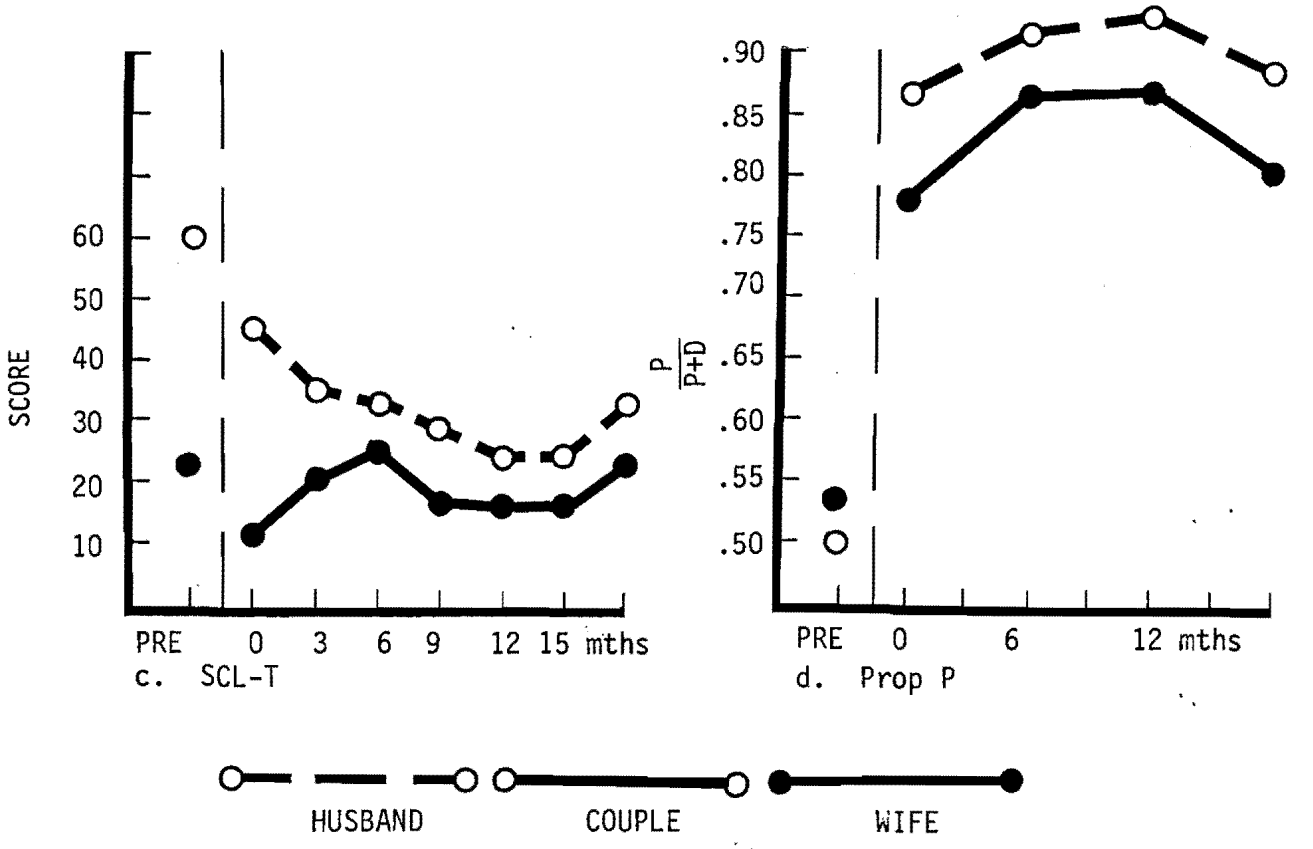


Figure 4.19. Marital Adjustment Test, Areas of Change Questionnaire, Symptom Checklist and Spouse Observation Checklist scores for Couple D13 over an 18-month follow-up.



At debriefing, the couple reported that they felt their relationship had deteriorated over the previous six months, and that they were not using the skills they had been taught. Figure 4.18a in particular confirms the accuracy of this report, with marital satisfaction having declined to pretreatment levels. The training was successful in increasing the husband's assertive behaviour and in reducing his Total Symptom and depression scores (see Figure 4.19c and Appendix II, respectively). It was also successful in reducing the number of conflicts (Figure 4.19b) and improving the Proportion Pleases (Figure 4.19d). It was, however, unsuccessful in making major improvements in Wife D13's ability to express feelings and respond sexually, although minor improvements were noted. Nor was it successful in maintaining an increased satisfaction with the marriage. A major difficulty for this couple throughout the follow-up period had been a chronic shortage of money. The husband was unemployed for long periods of time, or was forced to work at low paying jobs. It was virtually impossible for them to incorporate pleasurable activities into their relationship.

Summary. Of the seven couples, only three, D10, D11 and D12, demonstrated maintenance of gains over time. Of these, two had been involved in infidelity and one had involved the inability to communicate because of high levels of anxiety. In all cases, at least one of the partners took no major personality difficulty into the marriage.

Three couples, D7, D8, and D13, demonstrated initial gains, but these were not maintained over time. Couple D8 however, did maintain gains in the two MICS variables shown to be the most powerful discriminator variables for treatment effects.

In all cases, at least one partner did not communicate feelings, either because of high levels of anxiety in that relationship, or because prior learning did not include the expression of feelings. Each partner in the three relationships had pre-existing personality difficulties which the relationship reciprocally reinforced.

One couple, D9, appeared virtually unchanged. Here every conflict was a self-esteem issue. No conflict was ever resolved because neither partner was able to be supportive of the other. Each partner had pre-existing personality difficulties which the relationship reciprocally reinforced, and the full extent of the relationship problem was not divulged prior to therapy.

CONCLUSIONS

While Completers and Dropouts did not appear to differ in a systematic way, there was a tendency for Dropout couples to have been married longer, and for Dropout husbands to report less distress relative to Completer husbands. Both groups reported significant treatment effects, although the effect was more powerful for the Completer couples. It can be inferred, therefore, that maintenance of treatment gains is related to the strength of initial treatment effects, and possibly to the degree of distress experienced by the husband. Individual couples data indicate that maintenance of treatment gains is strongly related to an initial reduction to within nondistressed limits of the ACQ score.

Durable gains were reported in ACQ scores, the Displease Rate, and the Proportion Pleases. Despite the emphasis given to increasing the exchange of pleasing behaviours in the CRESST programme, as in other training programmes, the Please Rate was found to demonstrate the least durable gains.

This strongly suggests that the negative aspects of a relationship are more important in determining the level of marital satisfaction than are the positive aspects. This finding is in line with the earlier finding that 72% of variance in MAT scores is predicted by the ACQ.

One of the most durable gains reported was in Total Symptom scores. A strong correlation was found between SCL-T and MAT scores, $r = -.56$ ($p < .005$), and a decrease in symptoms following treatment was one of the most consistent findings. This suggests that the widespread availability of marital and family therapy could be expected to reduce the stress associated with dysfunctional interpersonal relationships to the point that it would have a significant impact on the national health budget. Further durable gains were made in two of the observational variables: Positive Nonverbal and Negative Verbal.

In examining both outcome and process data from Completer couples, it appears that success or failure of treatment probably depends less on the type of marital problem, and more on the ability of partners to stop reinforcing problem behaviours and to start reinforcing new constructive behaviours. This ability is probably related to the degree of pre-existing personality disturbance. While Husband D12 was able to reinforce his anxious wife's expression of feelings, Dropout Husbands D3 and D6 were far more threatened by their anxious wife's expression of feelings, and tended to respond with punishment. It appears that the greater the personality disturbance, the greater is the propensity to attend to well learned aversive internal stimuli at the expense of new external stimuli.

Success or failure also appears to be related to prior learning regarding the expression of feeling. This was a major issue for Dropout Husbands D2 and D4, Completer Husband D7 and Completer Wife D13. Only Husband D7 was able to adequately resolve this problem.

And finally, success or failure appears to be related to the available alternatives as predicted by social exchange theory. Dropout Husband D2 and Dropout Wives D4 and D6 found that the costs of staying in the relationship outweighed the costs of getting out.

Maintenance of gains was related not only to the immediate posttreatment scores, but to the systematic application of new skills over time. While an educational group format is an effective way of teaching new skills to several couples at a time, it is apparent that not all couples will be able to practise all such skills without more intensive therapy, and that some relationships are so destructive for family members that divorce counselling must be an accepted part of marital counselling. It is clear that the practice of reporting pre- and posttreatment scores only has provided little information regarding success and failure of therapy, and that reliance on MAT scores for monitoring follow-up has added little to our understanding of maintenance problems.

CHAPTER V

A BEHAVIOURAL INTERVENTION TO PREVENT MARITAL DISTRESS

Marital counselling has traditionally been concerned with treatment rather than prevention. Social norms dissuade couples from seeking therapy until hostility and resentment within the relationship are high and individuals' motivation to change their own behaviour is correspondingly low. Marriage is generally expected to satisfy most individual needs, and couples expect themselves to be able to solve any problems that arise. Unfortunately, each partner is able to contribute only those problem-solving skills which they have previously acquired within earlier relationships, which may well have been dysfunctional also.

Social resources can be used in two ways: to treat, or to prevent marital distress. Prevention appears to be the most attractive alternative. As was shown in the preceding chapter, unhappy couples experience few positive feelings about each other, experience a considerable amount of rejection from each other, and tend to demand instant changes of each other. In this type of relationship, it is difficult for partners to emit and to reinforce new, constructive behaviours. Couples who enter preventive training are less likely to be suffering rejection anxiety, and are more likely to approve of each other. It follows, therefore, that relationship skills can be more easily learned by happy, rather than unhappy couples.

It is well established that the real contribution to improved physical health and longevity has come from preventive measures rather than from expensive, specialized treatments (Powles, 1973). Similarly, it has been argued that treatment by way of education is a more effective approach to psychotherapy than is treatment along the lines of the medical model (Carkhuff, 1971; Guerney, Stollack and Guerney, 1971). For example, an educational model of parent training allowed for larger groups and less individual work than was required by a problem-oriented model (Sadler and Seyden, 1976). Nondistressed parents were reported to be more highly motivated than were distressed parents. In another instance, a preventive school counselling programme was described as revealing group curiosity and discovery, and this was compared to the high levels of tension and anxiety which often mark therapy groups (De Rosis, 1970).

It has also been argued that increasing treatment services simply results in an escalating spiral of increasing need (Peterson, Hartmann and Gelfand, 1980), and that it is time to decrease need by prevention of new cases. As applied to marital distress, this appears to be sound reasoning. It can reasonably be expected that the acquisition of interpersonal skills using an educational model will be easier for couples, and will be a more effective use of professional time than the provision of help following marital crises. The teaching of happy, rather than unhappy, couples is also likely to be less stressful and to require fewer professional skills. Mace and Mace (1976) suggested that such an approach, on a wide scale, could result in a considerable increase in the number of effectively functioning marriages and families and this, in turn, should greatly reduce the incidence of psychological and social problems within the community.

The key concept within the educational model appears to be the improvement of communication between partners. Stuart (1980) describes the Shannan-Weaver model of the communication process whereby, (1) an information source (2) encodes a message (3) which is transmitted (4) over a circuit that can be affected by redundant "noise" (5) to a decoding source (6) where it is interpreted and received as a message. Because of encoding, transmission, or decoding errors, the message received may not be the same as the message sent. It is this clarification of messages between partners which is emphasized by the educational model.

The theoretical rationale for such an approach is well established. Effective communication has been shown to be strongly related to marital adjustment (Bienvenu, 1970; Kahn, 1970; Murphy and Mendelson, 1973a; Navran, 1973). Satir (1968) emphasized communication systems in her therapy with families, employing many of the constructs suggested earlier by Jackson (1957, 1965 a and b). Lederer and Jackson (1968) and Bach and Wyden (1968) have elaborated on the importance of communication in the successful marriage, providing many examples of functional and dysfunctional patterns.

Using a communications theory framework, therapists have attempted to prevent marital problems by teaching engaged or dating couples communication principles, and skills for continually developing their relationship (Ginsberg and Vogelsong, 1977; Hinkle and Moore, 1971; Meadows and Taplin,1970; Miller et al., 1976; Van Zoost, 1973). Such studies have been conducted in university departments or student counselling centres.

Marital enrichment programmes which employ a communication skills framework include the Association of Couples for Marital Enrichment (Mace and Mace, 1976), the Minnesota Couples Communication Program (MCCP: Miller et al., 1976), Conjugal Relationship Enhancement (CRE: Collins, 1977; Rappaport, 1976), the Marriage Diagnostic Laboratory (Stein, 1975), and the Pairing Enrichment Program (Travis and Travis, 1975). Programmes supported by major denominations on a national level within the United States of America include the Roman Catholic Marriage Encounter and the Methodist Marriage Communications Lab (Otto, 1975). Of the 30 enrichment programmes identified by Otto, 65 percent were church-related.

Many of the studies purporting to evaluate premarital training and marriage enrichment have lacked control groups and have depended almost entirely on self-report measures. Church-related programmes, in particular, tend to be atheoretical and unsophsticated in their approach to evaluation.

In a controlled study of nondistressed married couples (Collins, 1977), 24 trained couples demonstrated significant improvement relative to 21 untrained couples on one measure of marital communication and one measure of marital adjustment. There were no significant differences between the groups on second measures of communication and adjustment. Four further controlled studies made use of behavioural measures, either coded audiotapes (Ginsberg and Vogelsong, 1977; Miller et al., 1976; Rappaport, 1976), or observer ratings (Hines, 1976). In addition, self-report measures were used in all but the Hines study.

The PRIMES (premarital relationship improvement by maximizing empathy and self-disclosure) programme was described by Ginsberg and Vogelsong (1977).

Forty-eight couples were randomly assigned to treatment and waiting list control groups. Highly significant posttraining differences between groups were found on the two scores derived from the behavioural measure, but only three of eight self-report scores showed significant differences. A second premarital study (Miller et al., 1976), using 32 randomly assigned couples, reported similar findings, with the strongest impact of the training being demonstrated by actual behaviour change.

Twenty nondistressed married couples completed a 2-month baseline, followed by a 2-month CRE programme (Rappaport, 1976). Significant improvements were demonstrated on two scores derived from the behavioural measure, and on all seven self-report measures. Hines (1976) randomly assigned 12 nondistressed married couples to a communication training group, a traditional therapy group or a no treatment control group. Prior to, and following, each of the five 2-hour training sessions, spouses interviewed each other, alternating as helper and helpee. Two trained observers rated the helper's degree of helpfulness. The communication training group was found to be significantly more improved than either of the other two groups.

Considered collectively, these four controlled studies provide reason for guarded optimism regarding the immediate impact upon relationships of communication skills training, particularly when behavioural measures are used. Others have reached similar conclusions. Despite what she described as "minimal" evaluation of marriage enrichment programmes, Beck (1976) concluded that such research added to the evidence for the effectiveness of a relatively brief, concentrated intervention in the modification of marital interaction patterns. The point was made by Rappaport (1976) that by using an

educational model even inexperienced graduate students were able to effect highly significant changes. However, none of the above studies attempted to evaluate the extent to which training-related improvements were maintained over time.

Communication skills training appears to be a flexible approach, with programmes initially designed for married couples being adapted to premarital couples (CRE) and vice versa (MCCP). While it has been argued that the development of a theoretical approach to premarital counselling is needed (Meadows and Taplin, 1970), intuitively, it does appear that those communication skills taught to distressed couples to assist them in dealing with major problems, should be effective in assisting nondistressed couples to deal with minor problems before they escalate into major ones.

The primary impetus for marriage enrichment programmes and premarital training in New Zealand has come from church groups, and little has been done to evaluate these programmes. Available programmes are, therefore, atheoretical and unvalidated.

Hicks and Platt (1970) describe two basic marital models: the institutional, and the companionship. The institutional model ascribes an instrumental role to the husband and an expressive role to the wife, whereas in the companionship model, the relationship is between persons rather than roles, and role definitions are interchangeable for the two spouses. While the institutional model has become increasingly redundant over past decades, and has been severely criticized (Laws, 1971), much of the content of the premarital training provided by the New Zealand Marriage Guidance Council relates to the institutional model. A need is seen for a training programme devoted primarily to the companionship model.

While behavioural theorists and practitioners have focused much attention on the development and evaluation of a theoretically-based intervention designed to treat marital distress, with few exceptions, the issue of prevention has not been similarly addressed.

In a study by Margolin and Weiss (1978b) a nondistressed couple, with Marital Adjustment Test scores of 114 (husband) and 100 (wife), was trained by a means of a cueing/feedback system to discriminate between helpful and unhelpful communications. Ten-minute segments of problem-solving behaviour were videotaped. Spouses coded these discussions as both "sender" and "receiver" of helpfulness. Three behavioural frequency measures were derived: (1) helpfulness sent; (2) helpfulness received: (3) mutual agreement on helpfulness. Improvement was reported on all measures and was maintained at a 2-month follow-up. Problem-solving behaviours as measured by the Marital Interaction Coding System (MICS) increased from near zero pretraining to .30 and .35 per minute posttraining, for husband and wife respectively, and .80 and .35 per minute at follow-up.

In a similar study (Margolin and Louscher, 1978), two groups of three nondistressed couples were given 12 hours of stepwise communication skills training. Improvements were evaluated using coded audiotapes of problem-solving discussions held at home, and in the clinical setting. *Pleases* and *Displeases* were counted before, during, and after training. In addition, two self-report measures were used to evaluate training, the Areas of Change Questionnaire (ACQ) and the Dyadic Adjustment Scale (DAS). Results were presented descriptively, without statistical analyses. Changes in behavioural measures from pre- to posttraining did not reflect consistent communication improvement. There were almost no changes in mean daily frequencies of *Pleases* and *Displeases*, and DAS and ACQ scores showed

only slight changes in the desired direction.

Through a church, Venena (1976) recruited nondistressed couples for a 7-week marital enhancement workshop. He argued that teaching couples only communication skills does not teach them how to follow through behaviourally, and teaching only behavioural skills does not help them to share verbally in more satisfying ways. To test these ideas, the workshop took three different forms. a communication skills, a behavioural exchange and a combined format. Scores on several self-report measures and on the *Please* and *Displease* frequency counts indicated that, while each group reported positive change, there was no dramatic improvement in any group. A Chi-square analysis demonstrated that the combined group experienced significantly more positive change than either of the other two groups.
Thus there is little evidence that a behavioural preventive approach to marital distress is effective. The same conclusion was reached by Gurman and Kniskern (1977). Like the analogue study described in Chapter II (Harrell and Guerney, 1976), results of behavioural studies of marital enrichment indicate few significant changes following training. The failure to find strong confirming evidence for the effectiveness of a behavioural model of prevention may be due to any of the following reasons:

1. The intervention may have no impact.
2. The measures used (designed for use with distressed couples) may be unsuitable for use with happy couples, and intervention may have no impact on the scores of happy couples because of ceiling effects.
3. It may be inappropriate to attempt to measure the impact of prevention training immediately following that training.

While it may be easier for happy couples to acquire relationship skills, and it may be more effective in terms of professional time to train happy couples, it is obviously easier to demonstrate treatment effects, rather than prevention effects. In regard to behavioural disorders, Petersen et al. (1980) cited evidence to suggest that the study of preventive methods had hardly begun. Of the very small number of references (2-3%) in the community psychology literature which dealt with prevention, many papers were merely philosophical essays, and a 1979 survey of behaviour therapists found that prevention was not mentioned as a category of specialization.

Notwithstanding the results of the preceding studies, behavioural training should be highly relevant to prevention, (1) because behavioural techniques are based on carefully developed procedures rather than on unproven, traditional clinical procedures, (2) because the techniques are structured and clearly specified and can, therefore, be replicated, (3) because goals can be specified in objective terms, and (4) because behavioural procedures are easily understood, and can be administered by moderately trained individuals, and by the client (Petersen et al., 1980).

It is probable that the success demonstrated by the communications school is experienced by practitioners because couples fortuitously apply their new skills contingently, and not because couples have been specifically taught to do so. The training system described by Margolin and Weiss (1978b) is based on the assumption that communication skills are constantly shaped by the consequences provided by each participant. While Margolin and Weiss used behavioural techniques to teach couples communication skills, this cannot be considered an adequate behavioural approach to the question of prevention.

What is needed is training in the use of verbal and nonverbal messages to influence the behaviour of others without accidentally training either themselves or significant others to adopt maladaptive responses, together with training in the ability to recognize and correct maladaptive patterns when they occur.

The present study, Study 3, attempted to train couples in such a way that they were themselves able to identify and prevent the development of dysfunctional communication patterns over time. A companionship model of marriage was assumed, a model which allowed couples to prescribe and negotiate their own individual roles.

To date, almost no follow-up data has been reported from preventive research. Follow-up data is important for two reasons. Preventive training can only be considered effective if it has some long term effect. An immediate impact on present problem-solving does not guarantee that the training will be used in the future to solve different problems. Furthermore, follow-up data may more appropriately demonstrate a preventive intervention than do posttraining data.

Despite the probability of ceiling effects when working with happy couples, a battery of measures originally developed for work with distressed individuals was used. The battery was multi-dimensional, and included self-report, quasi-observational and observational measures. Because these measures have been shown to discriminate distressed and nondistressed couples, they were expected to be sensitive to relationship deterioration. Deterioration over time, or the lack of it, may be the most important dimension in the study of prevention. In order to evaluate the probability of relationship deterioration over time, a no treatment control group was compared with a trained group of couples on repeated measures.

AIMS

The aims of Study 3 were:

1. To determine whether Experimental and Control groups differed in a systematic way on demographic characteristics.
2. To determine whether Experimental group pretraining scores on the battery of measures differed significantly from the Control group initial scores.
3. To investigate the significance and durability of treatment effects.
4. To determine whether Experimental husbands and wives were differentially affected by the training.
5. To investigate evidence of deterioration in the relationships of the Control group couples with the passage of time.

METHODS

The recruitment of couples and the training programme have been described in Chapter III.

Subjects

The subjects were 14 couples, married less than 18 months. They were nonrandomly assigned to Experimental and Control groups of seven couples each. The nonrandomization of the two groups is a major flaw in the design, but was unavoidable because of recruitment difficulties. The Experimental group was recruited and trained prior to the recruitment of the Control group. The degree of equivalence between the groups is described below. Each group included both low and middle income couples. The demographic characteristics of the two groups are shown in Table 5.1.

Table 5.1

Demographic characteristics of Experimental and Control groups of newlymarried couples.

	Experimental (N=7)		Control (N=7)	
	Wives	Husbands	Wives	Husbands
Age in years	26.6	26.3	22.4	25.9
Number of months married	9.7		5.6	
Years of education (inc. vocational)	13.3	12.9	13.9	14.1
Number of individuals previously married	1	2	0	1
Number of children to previous marriages	0	4	0	2
Number of individuals from single-parent homes	1	2	1	1
Number of individuals with happily married parents	4	4	4	5
Number of couples who lived together before marriage	3		5	
Number of couples who received premarital counselling	2		4	

Measures

The measures used in Study 3 have been described in Chapters II and III. Some of the measures yield more than a single score. The measures and the scores derived from them are listed in Table 5.2. Two scores derived from the Life Events Questionnaire (the Stress score, LEQ-S and the Change score (LEQ-C) were used as covariates during the group analysis of all outcome measures. This step was taken because some newlymarried couples are likely to experience many life changes and, consequently, a high level of stress. Statistical control of such variables was deemed *a priori* to be necessary, and subsequent analysis of distressed couple data showed a significant relationship between stress and marital satisfaction scores.

Table 5.2

The CRESST battery of measures as administerd to an Experimental and a Control group of newlymarried couples.

1.	Marital Prediction Test (MPT)	
	score:	MPT
2.	Marital Adjustment Test (MAT)	
	score:	MAT
3.	Areas of Change Questionnaire (ACQ)	
	score:	ACQ
4.	Inventory of Rewarding Activities (IRA)	
	score:	Proportion Spouse-Related Activities (Prop S-R)
5.	Spouse Observation Checklist (SOC)	
	scores:	Please Rate (P-rate)
		Displease Rate (D-rate)
		Proportion Pleases (Prop P)
6.	Current Time Distribution (CTD)	
	score:	Rewarding Time Spouse (RTS)
7.	Self Rating Scale for Depression (SRS)	
	score:	SRS
8.	Life Events Questionnaire (LEQ)	
	scores:	Stress (LEQ-S)
		Change (LEQ-C)
9.	Symptom Checklist (SCL)	
	score:	Total Symptoms (SCL)
10.	Marital Interaction Coding System (MICS)	
	scores:	Problem Solving (PS)
		Positive Verbal (PV)
		Positive Nonverbal (PNV)
		Negative Verbal (NV)
		Negative Nonverbal (NNV)

Procedure

Seven trained couples were compared to an untrained Control group on repeated measures of a multidimensional battery over a period of 12 months. Following pretesting on the above measures, the seven Experimental couples were trained as a group, using two coleaders, as described in Chapter III. Posttraining assessment was made on all measures, with the exception of the MPT, immediately following training, and again at 6 and 12 months. Additional measures were made on the MAT, SCL, LEQ and SRS at 3 and 9 months. Couples were seen individually after training and again at 6 and 12 months, at which times their decision-making interaction was videotaped. Group follow-up sessions were held at 6 and 12 months as described in Chapter III.

The Control group was similarly exposed to repeated measures, regular correspondence from, and personal interaction with the author. The group, therefore, served to control such variables as the passage of time, familiarity with the measures, the effects of being a research subject over an extended period of time, and attention from the author.

The original intention had been to have an 18-month baseline, but since one Control couple was experiencing considerable difficulties in their relationship, and two other couples were planning to leave Christchurch, it became necessary to reduce the baseline to a period of 12 months. Data was, however, collected from the Experimental group at 15 and 18 months. Follow-up results are reported in the individual couple section.

Experimental couples were debriefed at 18 months, and Control couples immediately following training. Training for the two groups differed in several important respects.

For example, Control couples were not asked to sign attendance and homework contracts, nor were they asked to use the buddy system. Whereas, the Experimental group was trained as a group of seven, the Control group was trained as a group of four, and a group of three. Each group had two coleaders and, because some of the Control couples were experiencing real difficulties, it was necessary for leaders to do more individual couple work than had been the case with the Experimental group. For these reasons, it was not possible to use a multiple baseline design. While training of the Control group is referred to below, the training was considered to be in return for data supplied, rather than a replication of the training given to the Experimental group.

RESULTS AND DISCUSSION

PART I: GROUPED DATA

Equivalence of the Experimental and Control Groups

Table 5.3 shows the means and standard deviations of four demographic variables for the Experimental and Control groups. The MPT provides a composite score derived from demographic and personality variables shown to have significant predictive validity in relation to marital adjustment (Locke and Wallace, 1958).

Table 5.3

Means and standard deviations of four demographic characteristics for the Experimental and Control groups.

Characteristic		Experimental Group Wives	Experimental Group Husbands	Control Group Wives	Control Group Husbands
MPT score	$\bar{x}$	290	302	304	326
	S.D.	32.6	45.6	67.5	48.5
Age (years)	$\bar{x}$	26.3	26.6	22.4	25.9
	S.D.	8.2	8.1	2.1	4.3
Months married	$\bar{x}$	9.7		5.6	
	S.D.	3.4		5.3	
Years of education (inc. vocational)	$\bar{x}$	13.3	12.9	13.9	14.1
	S.D.	1.6	2.6	2.3	2.1

The equivalence of the groups with respect to those variables shown in Table 5.3 was evaluated by means of a multiple analysis of variance (MANOVA). No significant multivariate group differences were found ($p < .29$). One significant univariate F test was found. Couples in the Experimental group had been married significantly longer than those in the Control group, 9.7 and 5.6 months respectively ($p < .05$).

Table 5.4 shows the means and standard deviations of all repeated measures for Experimental and Control couples. The initial scores for the Experimental group are shown in the "Pretraining" column, while the initial scores for the Control group are shown in the "1" column.

The equivalence of the groups with respect to initial scores on the CRESST battery of measures was investigated by means of a 2-way (Group X Sex) multiple analysis of covariance, with LEQ Stress and Change scores as covariates and MAT, ACQ, SOC, CTD, IRA, SCL and SRS scores as criteria. Experimental group pretraining scores were compared with Control group column 1 scores (see Table 5.4). No significant main effects were found for Group ($p < .89$) or for Sex ($p < .93$). There were no significant Group X Sex interactions, and no significant univariate F tests were found. The canonical correlation between criteria and covariates was found to be $R = .79$ ($p < .08$).

Despite the nonrandom allocation of couples to Experimental and Control groups, it may be concluded that there were no systematic differences between the groups initially, and that any subsequent differences between the groups will be due to training and not to pre-existing differences. While one significant univariate F test was found (number of months married), it was the Control group that had been married the shorter length of time. If one assumes that deterioration within marriage is associated with the passage of time, the Control group probably had an advantage over the Experimental group.

Table 5.4

CRESST Battery: Means and standard deviations for the Experimental and Control groups (repeated measures)

Variable		Experimental Group								Control Group					
		Husbands				Wives				Husbands			Wives		
		Pre training	1	2	3	Pre training	1	2	3	1	2	3	1	2	3
MAT	$\bar{x}$	125.9	128.3	124.9	132.7	115.1	129.0	128.4	129.2	113.3	113.0	109.4	124.1	116.6	122.0
	S.D.	10.5	10.8	15.4	19.0	29.9	22.0	18.4	16.2	19.7	14.7	15.1	16.5	23.8	12.2
ACQ	$\bar{x}$	4.9	2.7	1.6	1.3	4.9	2.7	1.6	1.3	6.7	6.6	7.1	6.7	6.6	7.1
	S.D.	5.3	3.0	1.6	1.4	5.3	3.0	1.6	1.4	7.2	6.0	7.3	7.2	6.0	7.2
SOC (Please rate)	$\bar{x}$	.77	2.45	1.56	1.36	.79	2.07	1.39	1.49	0.87	1.10	0.81	1.06	1.38	1.07
	S.D.	.19	1.36	1.06	0.76	.32	1.03	0.81	0.75	0.40	0.49	0.38	0.49	0.44	0.66
SOC (Displease rate)	$\bar{x}$	.16	0.16	0.14	0.12	.18	0.18	0.17	0.18	0.30	0.28	0.28	0.25	0.31	0.25
	S.D.	.10	0.06	0.09	0.11	.18	0.16	0.11	0.15	0.26	0.08	.15	0.14	0.11	0.19
SOC (Proportion Pleases)	$\bar{x}$	.83	.92	.92	.92	.82	.89	.89	.89	.75	.78	.74	.80	.79	.80
	S.D.	.11	.08	.05	.04	.17	.14	.06	.08	.12	.17	.11	.08	.11	.10
CTD (Rewarding time with spouse)	$\bar{x}$	3.90	3.99	4.09	3.99	4.35	3.82	3.50	3.59	3.93	3.45	3.61	3.94	3.76	4.18
	S.D.	2.04	1.75	2.02	1.67	2.4	1.85	2.30	1.40	0.86	1.03	0.91	0.48	1.27	1.24
IRA (Proportion of spouse related activities)	$\bar{x}$	.67	.68	.63	.64	.65	.71	.63	.69	.67	.65	.61	.69	.70	.68
	S.D.	.09	.14	.10	.06	.12	.10	.16	.11	.06	.06	.08	.05	.06	.05
SCL	$\bar{x}$	26.4	22.1	19.0	18.0	36.3	33.4	26.6	27.1	25.1	20.4	27.9	24.0	24.1	23.7
	S.D.	8.7	7.7	8.5	8.2	14.5	8.9	14.9	17.0	11.9	6.5	15.3	8.2	8.6	8.2
SRS	$\bar{x}$	4.3	4.1	5.0	4.1	7.6	7.0	7.0	5.7	4.4	6.6	8.1	4.7	6.1	7.7
	S.D.	3.5	3.9	6.8	2.5	5.9	3.7	5.6	4.8	2.8	4.9	4.6	3.1	7.5	5.9
LEQ (Stress score)	$\bar{x}$	25.7	17.9	27.0	15.6	24.9	15.4	22.1	19.7	20.6	13.6	19.9	27.7	27.3	15.3
	S.D.	21.7	22.1	29.2	14.2	11.6	7.1	26.7	16.5	13.9	15.9	14.1	24.9	20.3	11.2
LEQ (Change score)	$\bar{x}$	51.0	48.3	40.4	39.6	55.1	56.9	53.1	35.4	93.4	29.0	40.1	87.6	39.0	36.1
	S.D.	38.8	47.2	65.2	30.7	24.4	38.9	54.6	26.5	28.6	31.2	37.2	37.3	20.8	31.4

Treatment Effects: The Immediate Impact of Training

In order to investigate the immediate impact of training, a 2-way (Treatment X Sex) multiple analysis of covariance was performed. The Experimental group pretraining scores were compared with the Experimental group column 1 (immediate posttraining) scores (see Table 5.4). The MANCOVAR showed significant main effects for treatment $F(9.14) = 2.87, (p < .05)$, but not for Sex ($p < .17$). No significant interactions were found. The canonical correlation between criteria and covariates was $R = .87$ ($p < .05$). One significant univariate F test was found for main effects on Sex. Wives reported significantly higher SCL scores ($p < .05$). A summary of the univariate F ratios for main effects on Treatment and the standardized discriminant function coefficients are shown for the Experimental group in Table 5.5.

Despite the pretraining scores which were well within the nondistressed limits as established in Study 1, with the consequent risk of ceiling effects, Experimental couples were found to have made significant gains following training. The strong treatment effect of reciprocity training on the Please Rate mean scores can be seen in Table 5.5.

Durability of Treatment Effects

In order to investigate the durability of training effects, a 3-way (Group X Sex X Time) analysis of covariance was performed with covariates and criteria as described above. Experimental group scores at 0, 6 and 12 months posttraining (Columns 1, 2 and 3 respectively) were compared with Control group scores at 0, 6 and 12 months baseline (Columns 1, 2 and 3 respectively). Mean scores for both groups at each assessment period are shown in Table 5.4.

Table 5.5

Univariate and multivariate analyses of variance, pre- and posttraining scores for Experimental couples. Main effect for Treatment.

Score	Pretreatment Wives $\bar{x}$	Pretreatment Husbands $\bar{x}$	Posttreatment Wives $\bar{x}$	Posttreatment Husbands $\bar{x}$	F	Standardized Discriminant Function Coefficient
MAT	115.1	125.9	129.0	128.3	1.567	0.837
ACQ	4.9	4.9	2.7	2.7	4.411*	-1.165
P-rate	.79	.77	2.07	2.45	14.510**	0.970
D-rate	.18	.16	0.18	.16	0.273	1.395
Prop P	.82	.83	.89	.92	2.937	0.755
RTS	4.35	3.90	3.82	3.99	0.383	-1.866
Prop S-R	.65	.67	.71	.68	1.252	0.274
SCL	36.3	26.4	33.4	22.1	0.613	0.241
SRS	7.6	4.3	7.0	4.1	0.228	0.722

* $p < .05$
** $p < .01$

Multiple R = .81
$F(9,14) = 2.87$, $p < .05$

The MANCOVAR showed significant main effects for Group $F(9.62) = 5.286$, ($p < .001$), but not for Sex or Time. No significant interactions were found. The canonical correlation between criteria and covariates was found to be $R = .54$ ($p < .06$). Table 5.6 presents a summary of the univariate F ratios for main effects on Group, and the standardized discriminant function coefficients for each variable.

Table 5.6

Univariate F ratios and standardized discriminant function coefficients of those CRESST variables entered into multivariate analysis of variance (repeated measures). Main effect for Group.

Variable	F	Standardized discriminant function coefficient
MAT	9.675*	0.100
ACQ	18.929**	0.333
P-rate	14.259**	0.817
D-rate	12.883**	0.604
Prop P	29.802**	0.025
RTS	0.026	-0.313
Prop S-R	0.586	-0.171
SCL	0.068	0.039
SRS	0.528	0.004

* $p < .005$
** $p < .001$

Multiple R = .65
$F(9,62) = 5.16$, $p < .001$

Since there were no significant differences between husbands and wives on any of the outcome measures (at 0, 6 and 12 months) the husband/wife distinction was collapsed for subsequent analyses. Changes on each of the measures with the passage of time are shown in Figures 5.1 to 5.9.

Figure 5.1 shows the mean MAT scores every three months. Note that a score of less than 100 is indicative of marital distress. The Experimental group mean was 120.5 before training. Following training the score increased to 128.6 and that level was maintained over twelve months. The Control group scored 118.7 initially and that level was maintained over twelve months.

Figure 5.2 shows the mean ACQ couple scores every six months. The Experimental group mean was 4.9 before training. Following training the score decreased to 2.7 and further decreased over time. The Control group scored 6.7 initially and that level was maintained over twelve months.

Figure 5.3 shows the mean Displease Rate every six months. The Experimental group mean was 0.18 Displeases per hour before training. Following training the score was 0.17 and that level was maintained over twelve months. The Control group scored 0.27 initially and that level was maintained over twelve months.

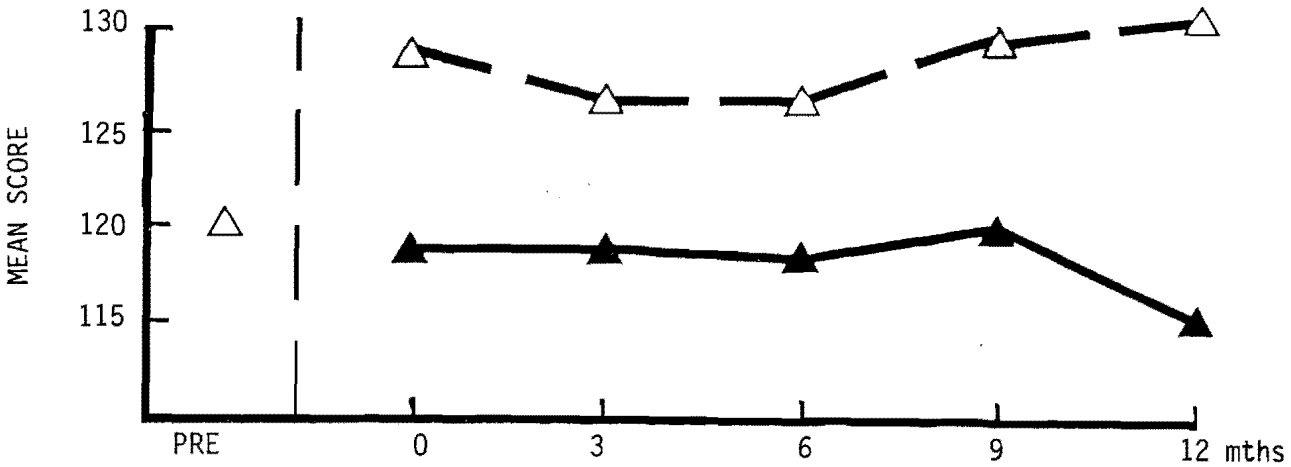


Figure 5.1 Mean Marital Adjustment Test scores for trained and untrained couples every three months.

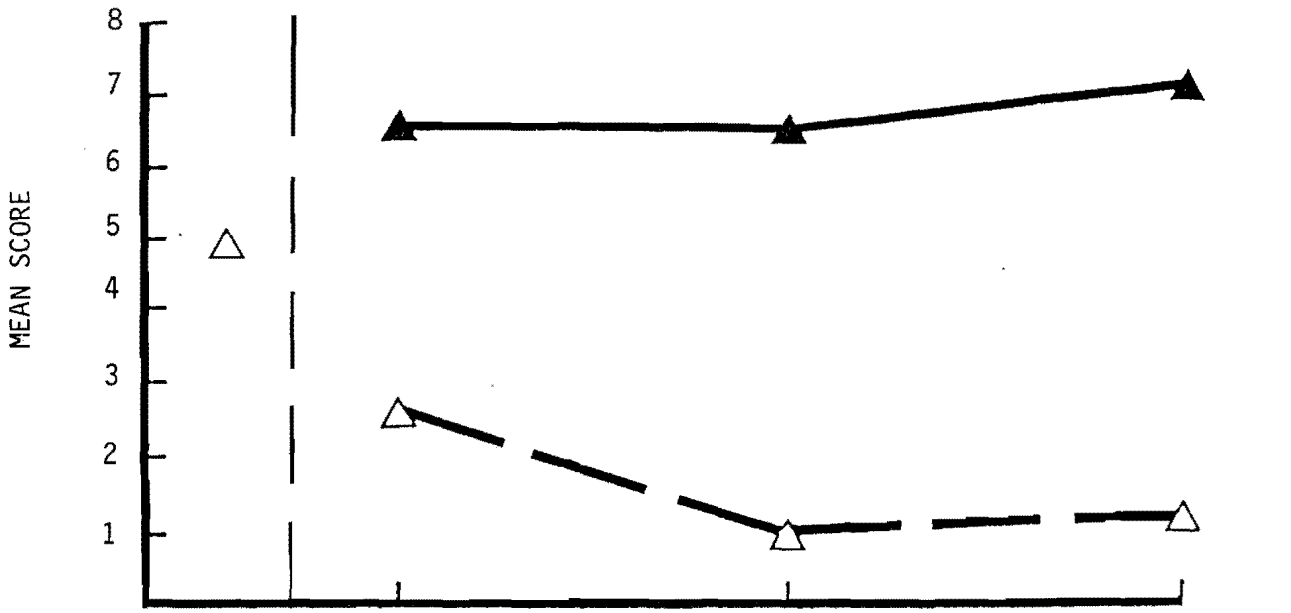


Figure 5.2 Mean Areas of Change Questionnaire scores for trained and untrained couples every six months.

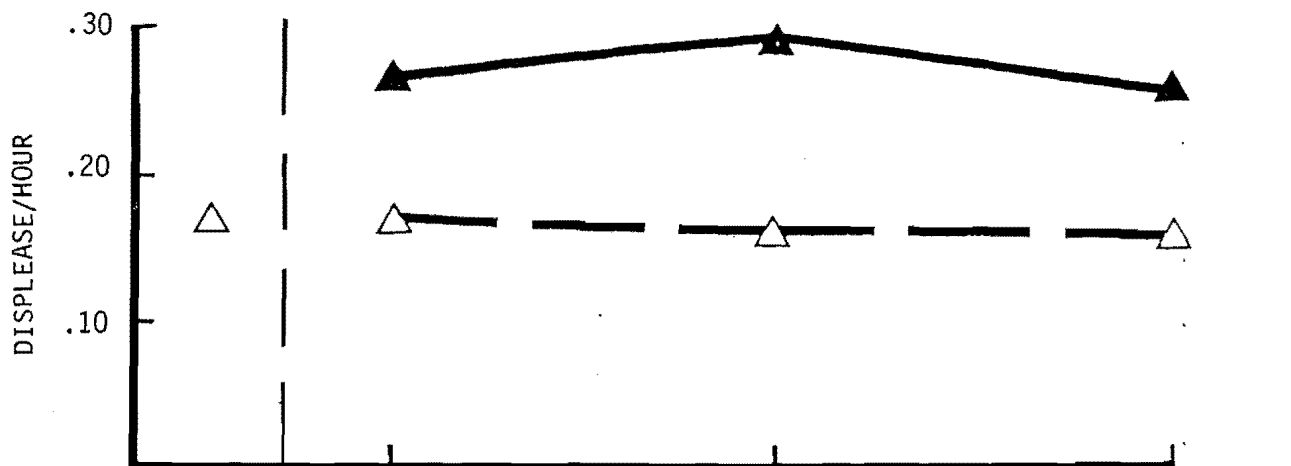


Figure 5.3 Mean number of Displeases per hour for trained and untrained couples every six months.

Figure 5.4 shows the mean Please Rate every six months. The Experimental group mean was 0.78 Pleases per hour before training. Following training the score increased to 2.26. At six months the score had decreased to 1.47, a level which was maintained at twelve months. The Control group scored 0.96 initially and that level was maintained over twelve months.

Figure 5.5 shows the mean Proportion Pleases every six months. The Experimental group mean was .83 before training. Following training the score increased to .91 and that level was maintained over twelve months. The Control group scored .77 initially and that level was maintained over twelve months.

Figure 5.6 shows the mean Proportion Spouse-Related Activities every six months. The Experimental group mean was .66 before training. Following training scores fluctuated above and below that level over twelve months with no clear trend. The Control group scored .68 initially. There was a slight downward trend over twelve months.

Figure 5.7 shows the mean Rewarding Time Spouse in hours per day every six months. The Experimental group mean was 4.1 before training. Following training that level decreased slightly over twelve months. The Control group scored 3.9 initially. That level decreased at six months but was reached again at twelve months.

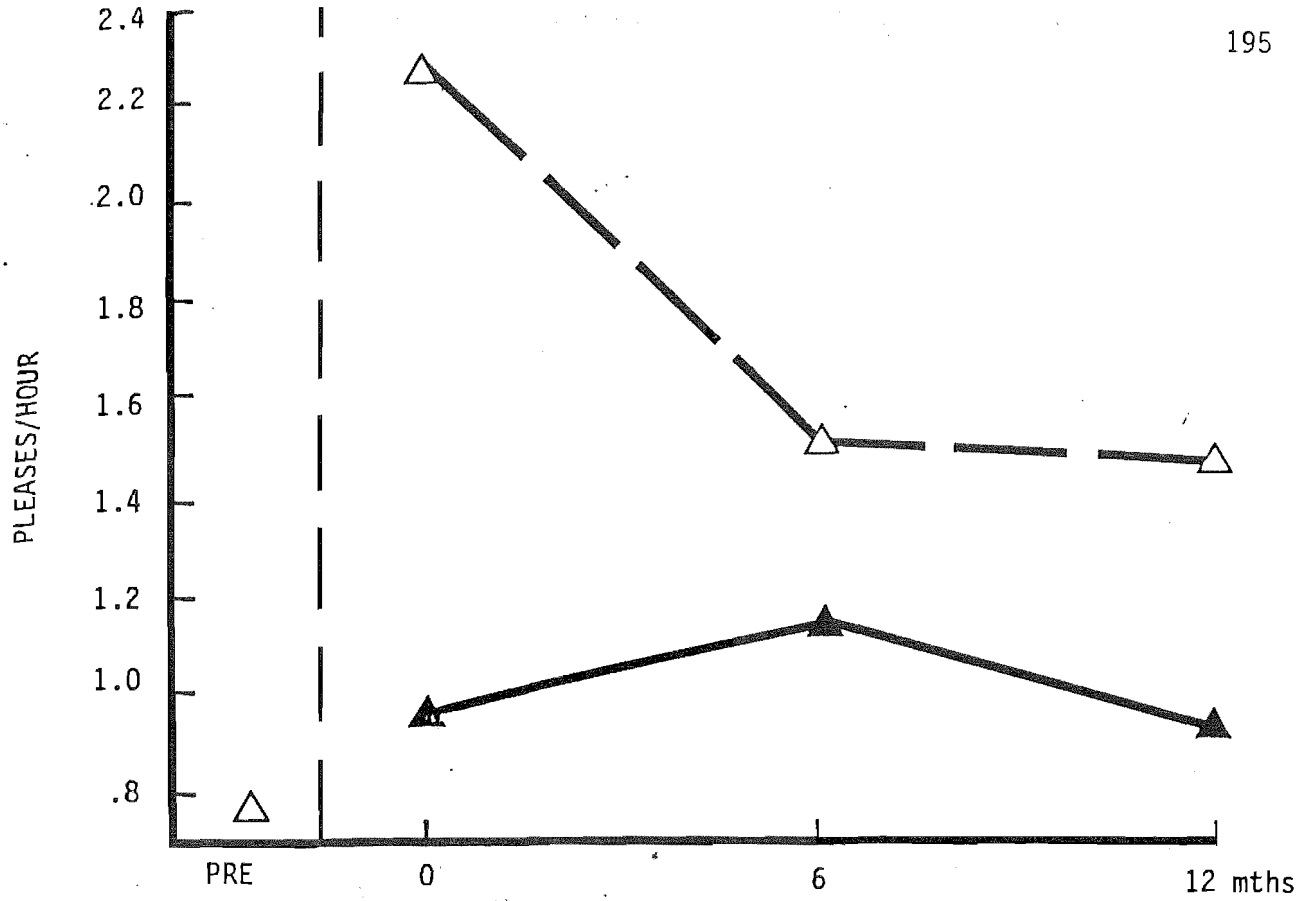


Figure 5.4. Mean number of Pleases per hour for trained and untrained couples every six months.

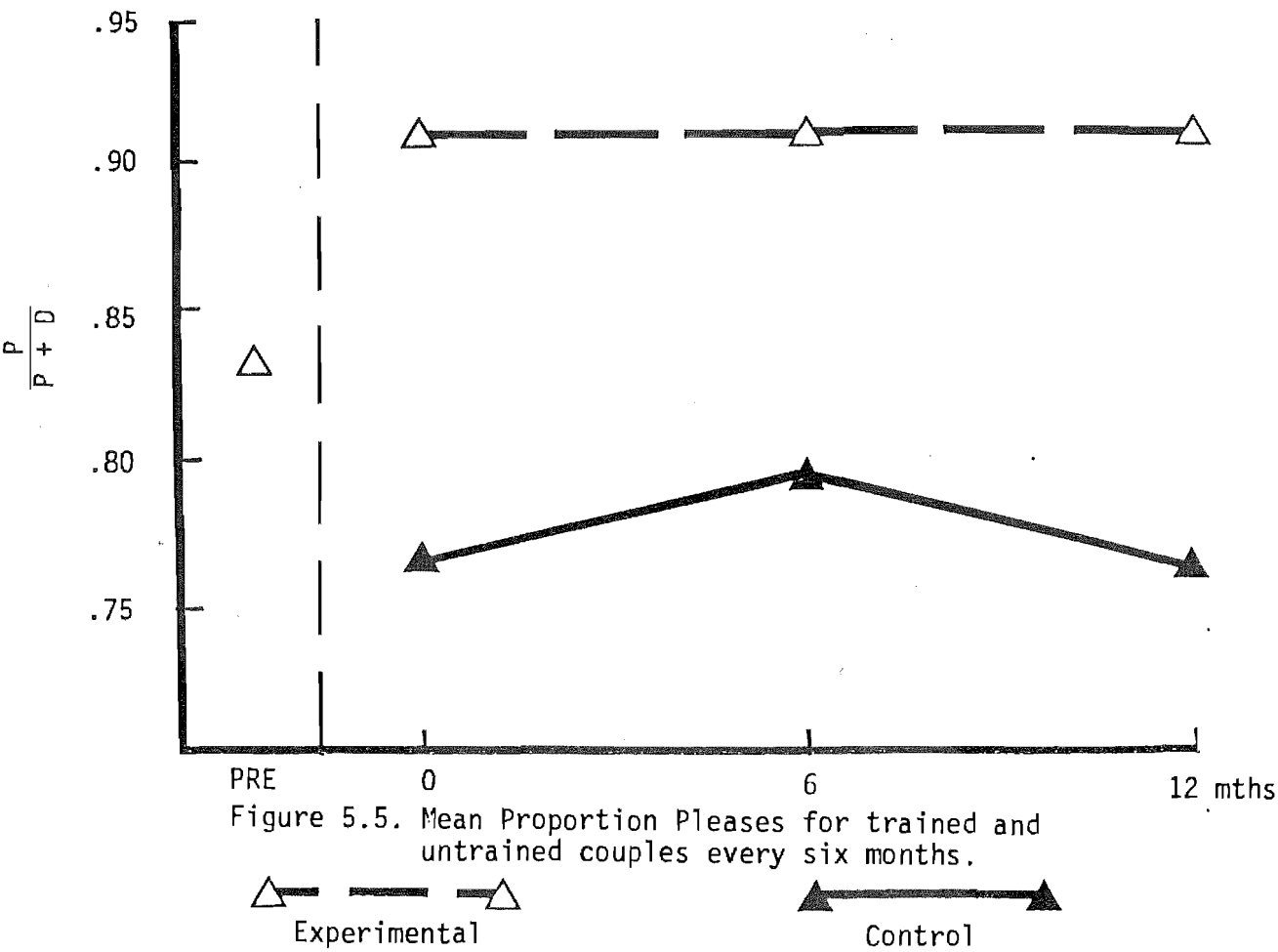


Figure 5.5. Mean Proportion Pleases for trained and untrained couples every six months.

Experimental

Control

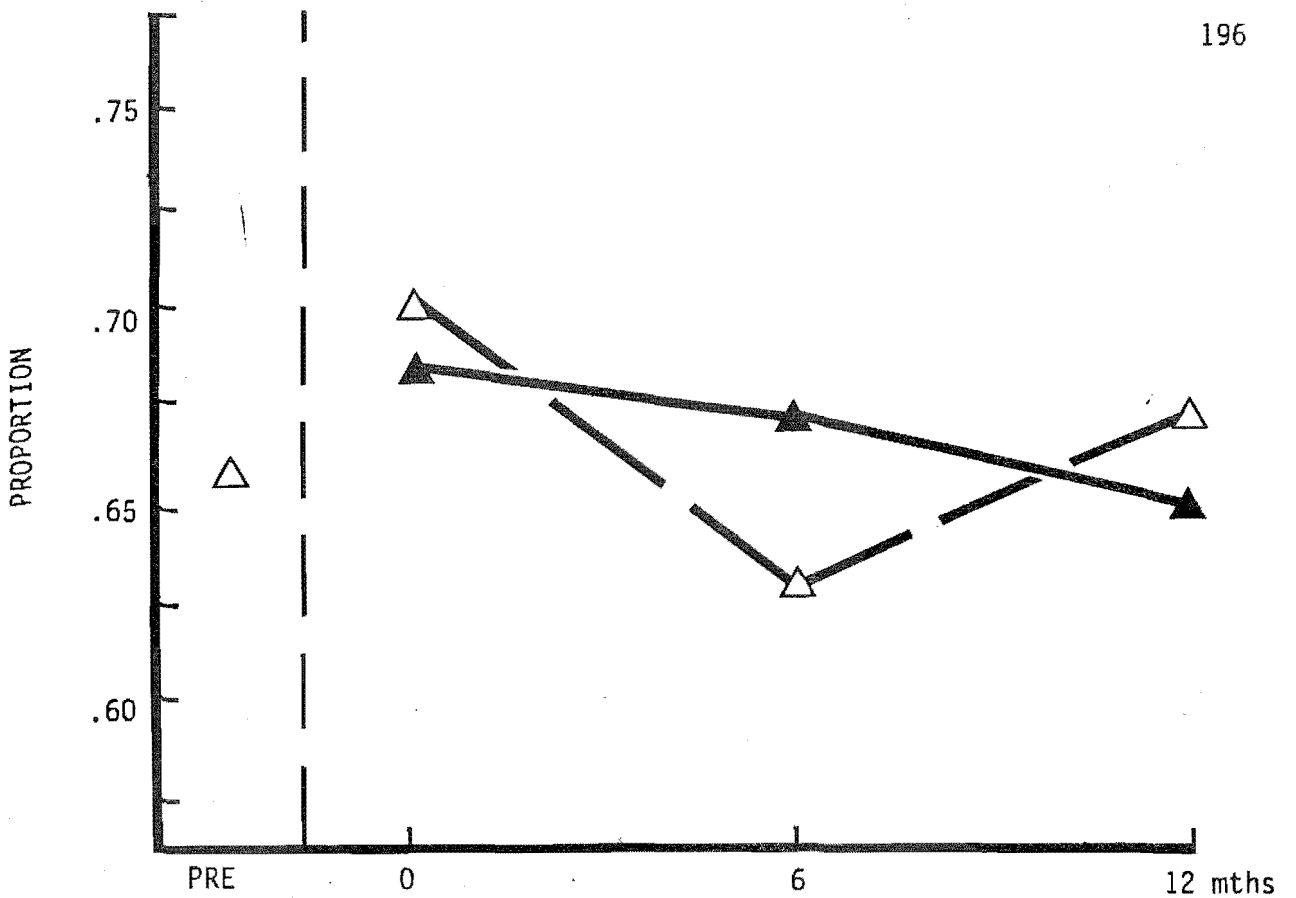


Figure 5.6. Mean Proportion Spouse-Related Activities for trained and untrained couples every six months.

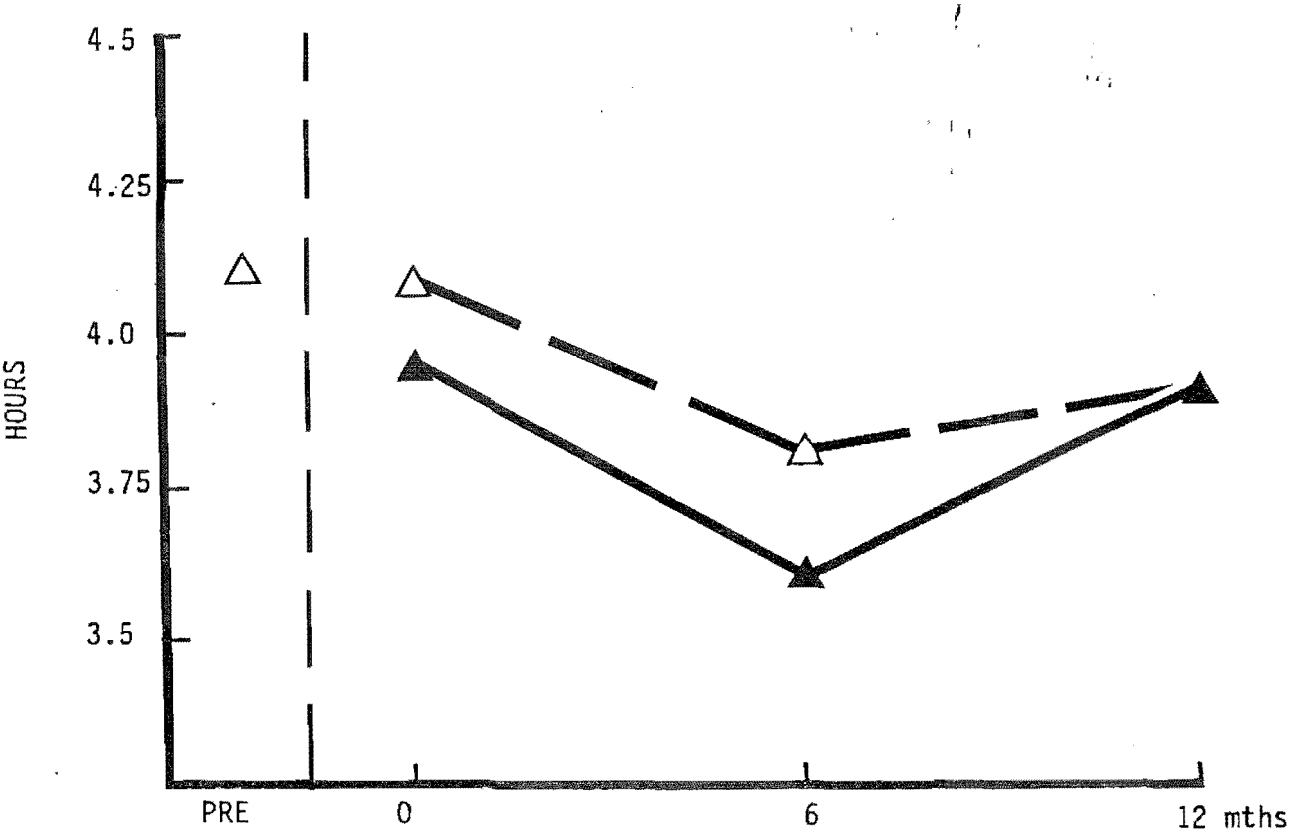


Figure 5.7. Mean number of hours of Rewarding Time Spouse for trained and untrained couples every six months.

Experimental

Control

Figure 5.8 shows the mean Total Symptoms for husbands every three months. The Experimental group mean was 26.4 before training. Following training the score decreased to 22.1 and the trend over twelve months was downward. The Control group scored 25.1 initially. There was no clear trend over twelve months.

Figure 5.9 shows the mean Total Symptoms for wives every three months. The Experimental group mean was 36.3 before training. Following training, the score decreased to 33.4 and the trend over twelve months was downward. The Control group scored 24.0 initially and that level was maintained over twelve months.

Results of the multiple analyses of covariance indicate that there were no significant differences between the groups on the CRESST battery of measures when the two groups (Experimental and Control) were recruited. Following training, the Experimental group was shown to have made significant gains in comparison with pretraining scores. When the two groups were compared over time on repeated measures, the differences were highly significant. The Experimental group, following training, outperformed the untrained Control group on several measures MAT ($p < .005$), ACQ ($p < .001$), P-rate ($p < .001$), D-rate ($p < .001$), Prop P ($p < .001$). This suggests that the initial training gains were maintained, and that the passage of time did not result in similar gains being made by the Control group.

Figures 5.1 to 5.9 illustrate that, with the exception of the P-rate, treatment gains on these variables were durable over time. During debriefing, couples reported having habituated over time to *Pleases*.

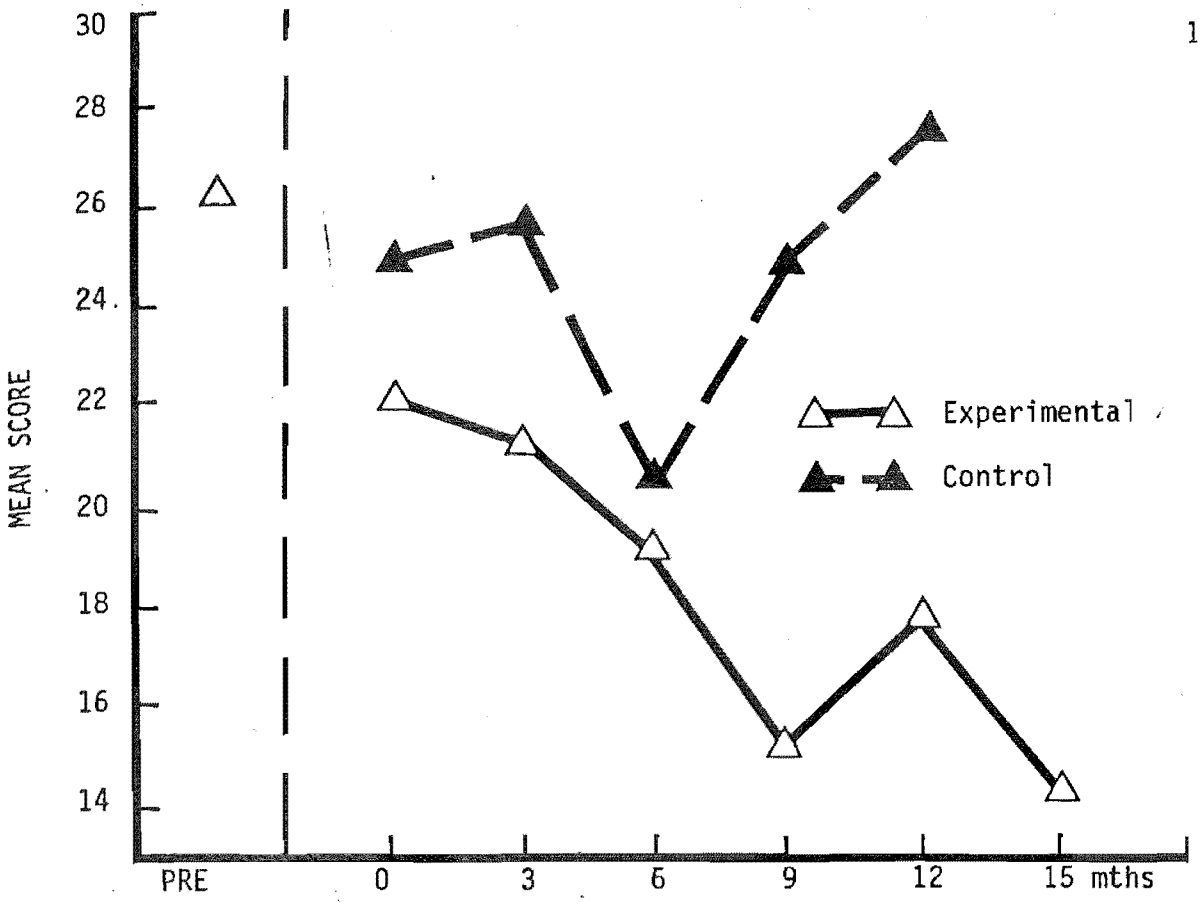


Figure 5.8. Mean Total Symptom scores for trained and untrained husbands every three months.

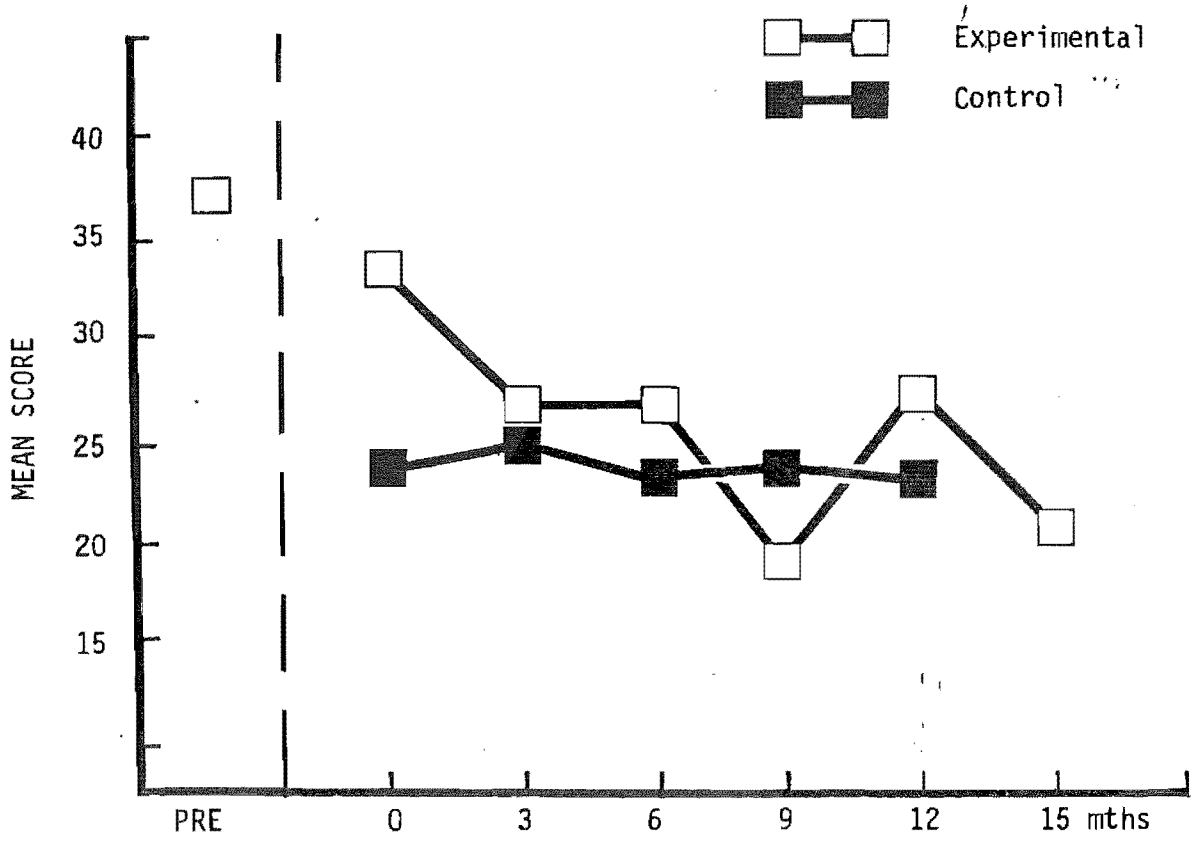


Figure 5.9. Mean Total Symptom scores for trained and untrained wives every three months.

While specific behaviours were not consistently reported as *Pleases*, the P-rate was maintained at a higher than baseline level following an initial loss in training gains. Trained distressed couples in Study 2 demonstrated a similar loss. The exchange of *Pleases* does appear to have a certain novelty value.

The training appeared to have a more lasting impact on the Proportion Pleases score (Figure 5.5) and on the across couples reciprocity. Reciprocity of *Pleases* and *Displeases* between husbands and wives was investigated over three seven-day periods at 0, 6 and 12 months posttraining. For Control couples, correlations were .93 and .84 for *Pleases* and *Displeases* respectively, while for Experimental couples corresponding correlations were .93 and .65. Control group data are very similar to those found for the Nondistressed group in Study 1 (.92 and .83, respectively). The lower correlation of .63 for *Displeases* exchanged between Experimental husbands and wives probably relates to their ability to deal constructively with *Displeases* as they occurred. Such a claim was made by several couples at debriefing.

One score, the Proportion Spouse-Related Activities (Figure 5.6) was unresponsive to training, and differences between the groups were not evident. Both behavioural theory, and the author's own clinical experience predict no differences between the groups on this measure since, even when highly distressed, young childless couples continue to engage in many shared activities. It is probable that the scores reported on this measure represent ceiling effects. The mean female score over time (approx .68) is higher than the mean score reported by nondistressed wives in Study 1 (.65) while newlymarried husbands in Study 3 and nondistressed husbands in Study 1 report approximately the same score (.64).

Three of the most powerful discriminating variables during follow-up, as indicated by the standardized discriminant function coefficients, the ACQ, P-rate, and D-rate, are of major theoretical importance. Not only were these variables shown to discriminate distressed and nondistressed couples in Study 1, but they have also been shown to discriminate trained from untrained newlymarried couples in the present study.

The above data provide strong evidence for the effectiveness of training both in the short and long term. The effects of training appear to be not limited to relationship variables. Figures 5.8 and 5.9 illustrate a drop over time in Total Symptom scores.

Differences Between Husbands and Wives

No significant differences were found between the scores of husbands and wives when the equivalence of the Experimental and Control groups with respect to pretreatment scores was tested by means of a 2-way (Group X Sex) MANCOVAR, or when maintenance of gains was tested by means of a 3-way (Group X Sex X Time) MANCOVAR. These results are similar to those found in the Nondistressed group in Study 1, but contrast to those found in the Distressed group of the same study where significant sex differences were found, and in the trained Distressed group in Study 2 where sex differences approached significance. Such findings suggest that sex differences in scores are related to distress, and are not inherent in the husband/wife relationship.

While the significant univariate F test found on the SCL for the Experimental group (pre- to posttraining) suggested that, like distressed wives, newlymarried wives reported significantly higher SCL scores than do newlymarried husbands, examination of Figures 5.8 and 5.9 indicate that Control husbands and wives do not follow this same pattern.

Initially, Experimental and Control husbands' scores were close, but diverged over time. Experimental and Control wives' scores, however, showed a large initial discrepancy. Three wives having been identified as highly anxious, were taught relaxation as an adjunct to training. Over time, SCL scores decreased for the trained wives, despite two of their number becoming pregnant during that time. The low point at 9 months is deceptive, since one high-scoring pregnant wife did not return data. Results suggest that training in relationship skills helps to reduce stress, and this is reflected in a reduction of reported symptoms. Results plus clinical observations of both groups during training further suggest that SCL scores for newlymarried couples are related to anxiety, but anxiety is not necessarily sex-related.

Behavioural Observations in the Laboratory

Table 5.7 shows the means and standard deviations of five variables derived from the MICS for the Experimental group (pre- and posttraining) and for the Control group at 0 months.

Table 5.7

Means and standard deviations of five variables derived from the MICS for the Experimental and Control groups.

Variable		Expt. (Pre-) F	Expt. (Pre-) M	Expt. (Post-) F	Expt. (Post-) M	Control (0 mths) F	Control (0 mths) M
Problem Solving	$\bar{x}$	0.97	0.81	1.21	1.00	1.24	0.91
	S.D.	0.48	0.43	0.67	0.55	0.66	0.44
Positive Verbal	$\bar{x}$	0.60	0.72	0.65	0.69	0.61	0.60
	S.D.	0.43	0.26	0.48	0.59	0.36	0.57
Positive Nonverbal	$\bar{x}$	4.08	2.82	4.36	3.89	5.54	3.46
	S.D.	2.23	1.02	1.11	1.67	2.62	1.31
Negative Verbal	$\bar{x}$	0.51	0.30	0.49	0.60	0.10	0.04
	S.D.	0.77	0.19	0.85	1.14	0.11	0.08
Negative Nonverbal	$\bar{x}$	0.71	0.48	0.17	0.03	0.10	0.39
	S.D.	0.80	0.55	0.25	0.09	0.19	0.55

The equivalance of the groups with respect to those variables shown in Table 5.7 was evaluated by means of a multiple analysis of variance. No significant multivariate group differences were found when pretraining scores for the Experimental group were compared with the Control group scores at 0 months ($p<.28$). No significant treatment effects were found when pre- and posttraining scores were compared ($p<.29$), and when posttraining Experimental group scores were compared with initial Control group scores ($p<.67$) by means of two further MANOVAS. Furthermore, there were no apparent trends over time (see Appendix III).

Deterioration of the Untrained Control Group

While analysis of pooled data, with the exception of MICS data provides evidence for the effectiveness of the training, and the maintenance of gains, examination of Figures 5.1 to 5.9 provide no evidence of Control group deterioration over time. Furthermore, although the 3-way (Group X Sex X Time) MANCOVAR showed significant differences between the groups, there was no significant Group X Time interaction.

Behavioural theory, however, predicts that over time couples are likely to report a decrease in *Pleases* and increases in *Displeases* and unresolved conflict. Avoidance behaviour as measured by Proportion Spouse-Related Activities would be the last to show evidence of deterioration. Since the pooling of data may have hidden such trends, couple data was examined and selected data is reported below. Additional data is reported in Appendix III.

PART 2: INDIVIDUAL COUPLES DATA

Experimental Couples

Figures 5.10 to 5.16 illustrate changes in husband and wife scores over an 18-month follow-up period for the seven Experimental couples. As a reference, MAT scores were plotted for each individual. Since response to training varied from couple to couple, additional scores were plotted for each couple on the basis of responsiveness to training. Scores on measures which added little to the demonstration of relationship changes were not plotted. They are, however, available in Appendix III.

Couple NM1. Results for Husband and Wife NM1 are shown in Figure 5.10. The wife had previously received psychotherapy for depression, but continued to have an extremely low self-image. The husband's poor fluency led to difficulty in the expression of thoughts and feelings. Initially, the couple was dissatisfied with the quality of their leisure time which was reflected in the husband's Rewarding Time Spouse score (Figure 5.10b), were exchanging a low rate of *Pleases* (Figure 5.10d), and were reporting high Total Symptom scores (Figure 5.10c).

During training the wife was taught deep muscle relaxation, and both husband and wife completed assertion tasks with third parties.

Following training, the couple moved to the North Island, but the wife was later forced to return to Christchurch for further vocational training. Her low MAT score at 3 months coincided with that period of separation. For both, the SCL score decreased over time, while the P-rate increased to 12 months (no 18 month data is available). RTS scores indicate that leisure time problems were alleviated, but MAT scores display no obvious trend.

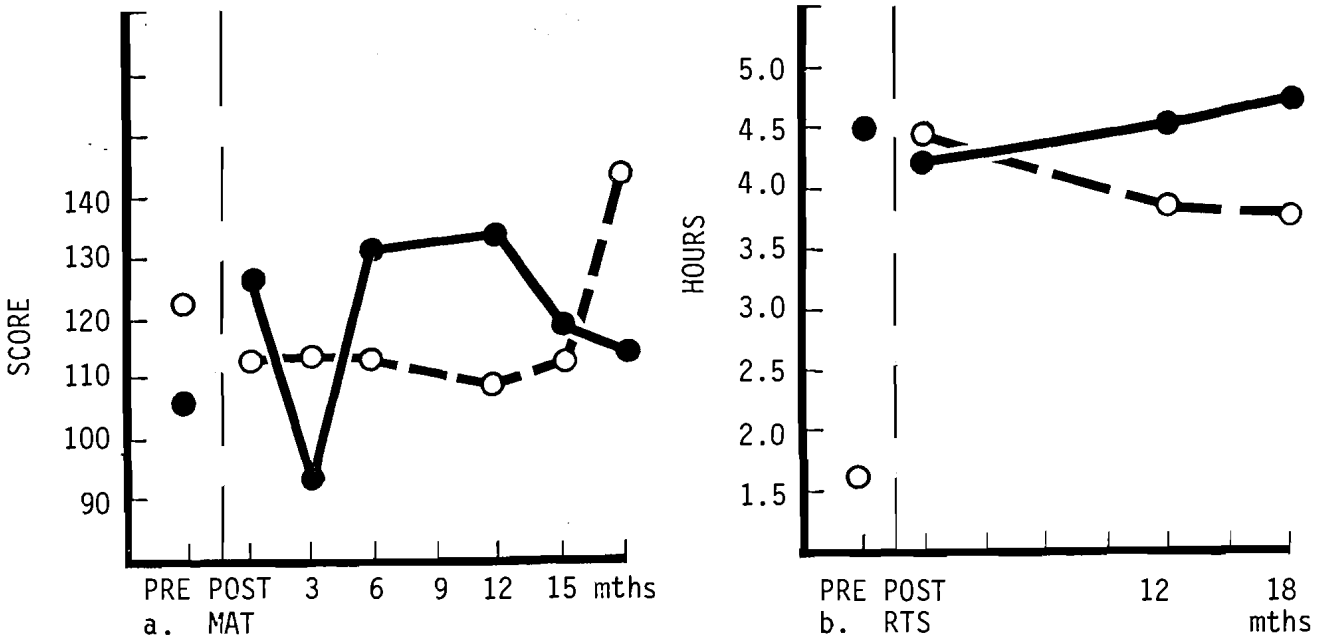
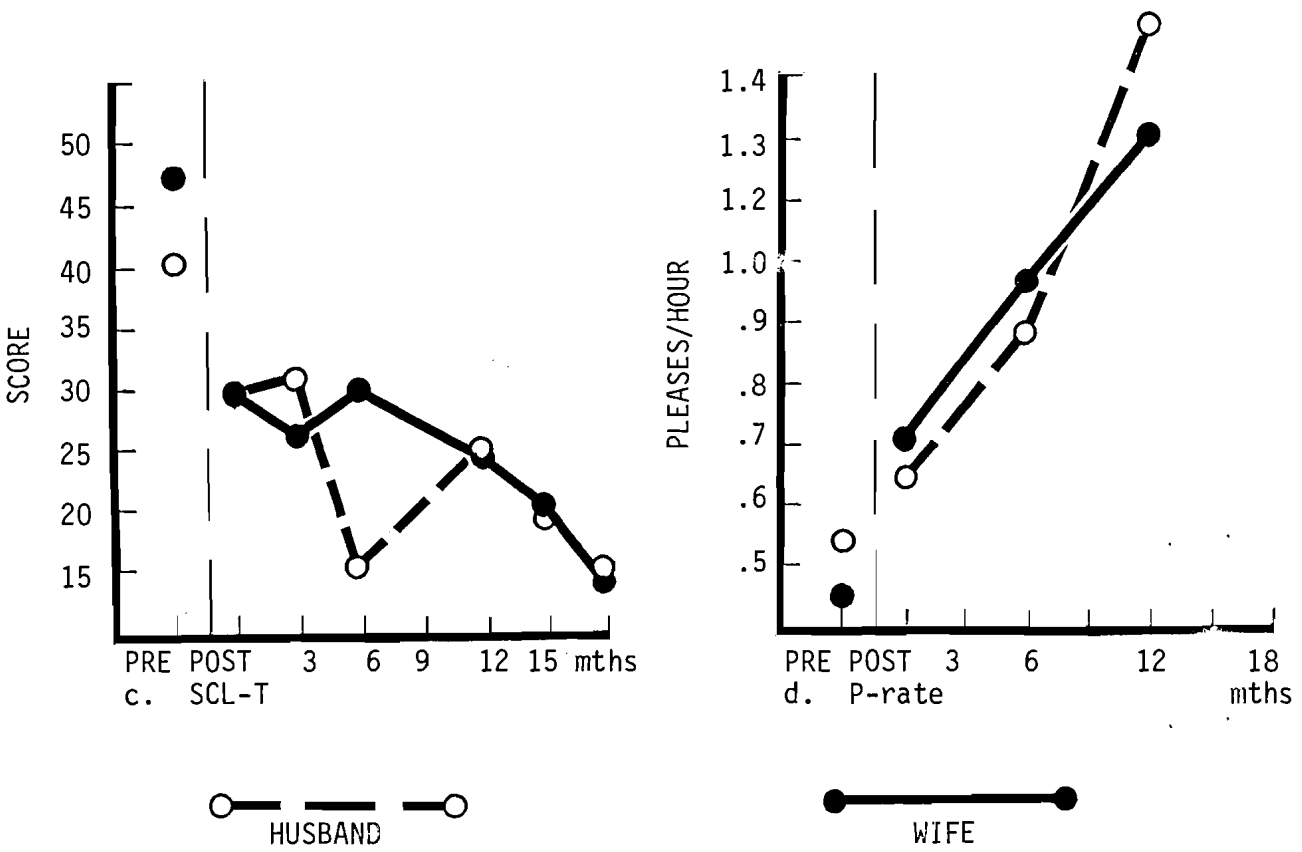


Figure 5.10. Marital Adjustment Test, Current Time Distribution, Symptom Checklist and Spouse Observation Checklist scores for Couple NM1 over an 18-month follow-up.



Couple NM2. Results for Husband and Wife NM2 are shown in Figure 5.11. The wife reported a high level of anxiety and several specific phobias and these difficulties were reflected in her initial SCL score of 55 (Figure 5.11c). She was extremely dependent upon her husband. He, while being supportive of his wife, had great difficulty in expressing feelings.

During training the wife was taught deep muscle relaxation, and was given instructions on how to conduct *in vivo* desensitization. The husband was taught how to assist in the process of desensitization, rather than to reinforce her avoidance behaviour as he had previously been doing. She was able to desensitize herself to riding elevators and to using public toilets during the 10-week training. The couple is assumed to now possess the skills to recognize and treat any future development of phobic reactions.

During the second half of the follow-up period, there was a pregnancy, the birth of a first child, the death of a brother, a traumatized widowed relative, a divorce in the immediate family and an extended family member joined the household. Despite all this, MAT and P-rate scores, while showing a downward trend, remained above baseline levels (Figures 5.11 a and b respectively). Subsequent to the pregnancy, the wife's SCL score began to decrease. This decrease had been preceded by an upward trend for both husband and wife.

At the debriefing, the couple reported that the increase in D-rate scores reflected the many life changes that had occurred (Figure 5.11d), but that *Displeases* were appropriately handled. The addition of a child to the family had been a particularly difficult time for the husband, who had felt rejected. The wife continued to be untroubled by her earlier phobias.

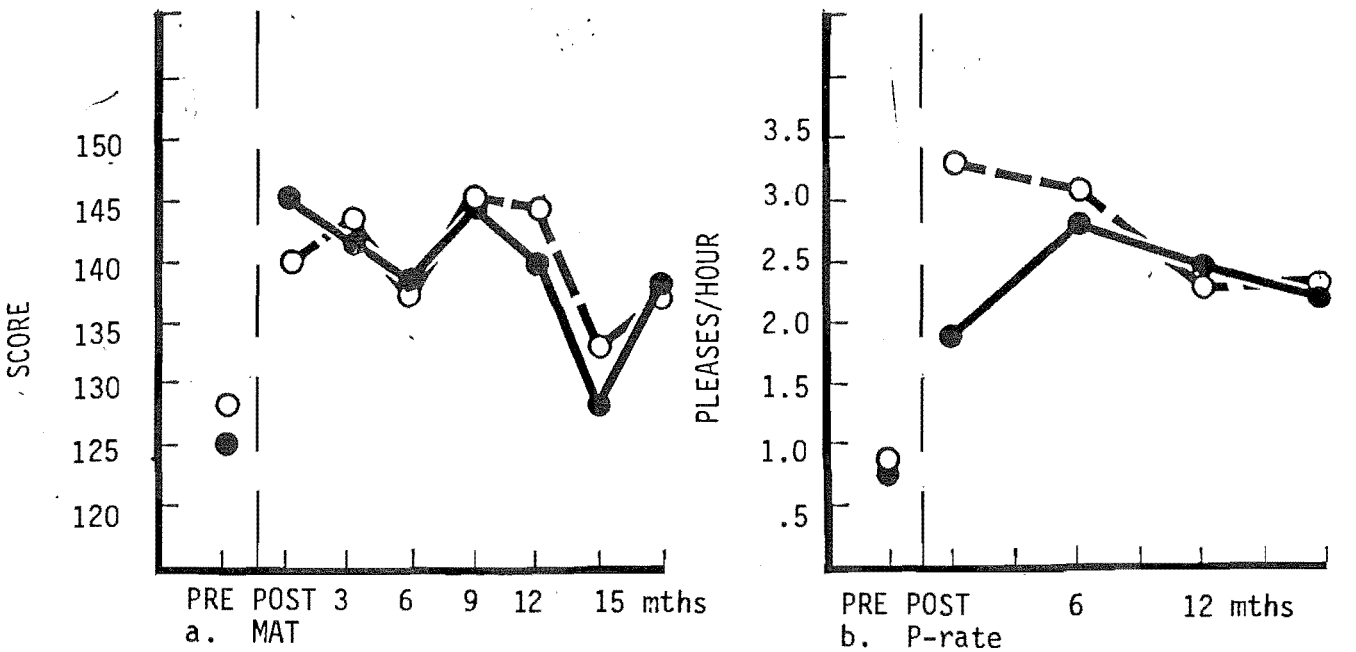
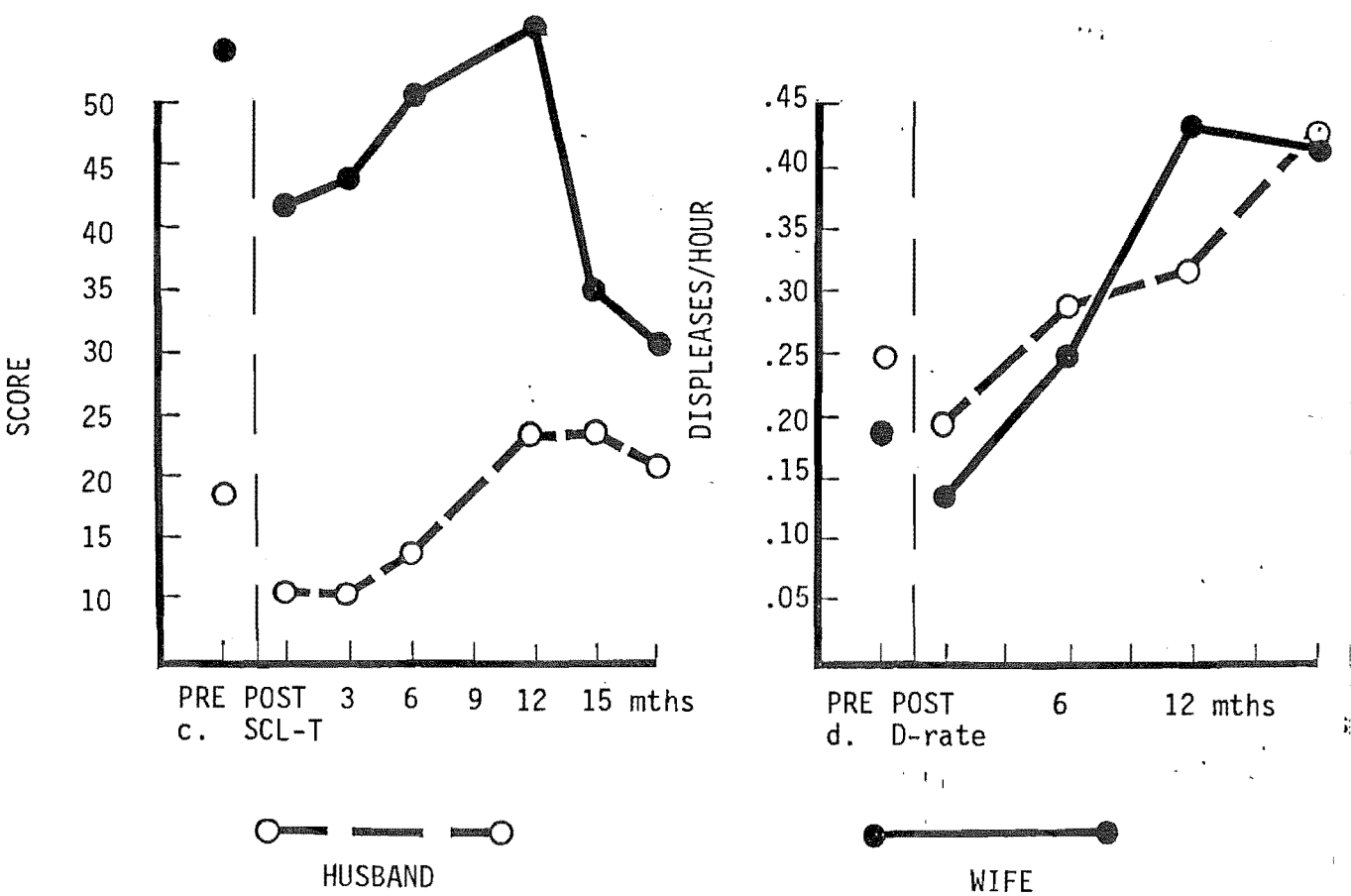


Figure 5.11. Marital Adjustment Test, Spouse Observation Checklist and Symptom Checklist scores for Couple NM2 over an 18-month follow-up.



Couple NM3. Results for Husband and Wife NM3 are shown in Figure 5.12. Both husband and wife had been married previously. The wife suffered from chronic back pain related to a spinal injury. While there were no obvious anomalies in the initial scores, during training it became apparent that the wife had a great deal of difficulty accepting praise, and that the husband handled his negative feelings by sulking for days on end. Behaviour management programmes were designed to address these specific problems.

Following training, the wife reported a near maximum score on the MAT (Figure 5.12a) and there was a dramatic increase in both husband's and wife's P-rate (Figure 5.13d). This increase was not, however, maintained over time. While the wife maintained MAT scores well above the mean for happy couples, as established in Study 1, at six months the husbands MAT score had decreased to 98. At the same time, his P-rate dropped significantly, his SCL score increased somewhat (Figure 5.12d), and his SRS score increased markedly (Figure 5.12b).

At the debriefing, the husband reported that prior to the six-month assessment, he had temporarily given up smoking and had become extremely irritable at home and at work. He had become aware of a deterioration in his marital relationship, and had deliberately applied the skills he had acquired from the CRESST course in order to improve matters. He believed that, prior to training, he would have continued to let things slide. The trend in his MAT scores after six months is mirrored in his SCL and SRS scores.

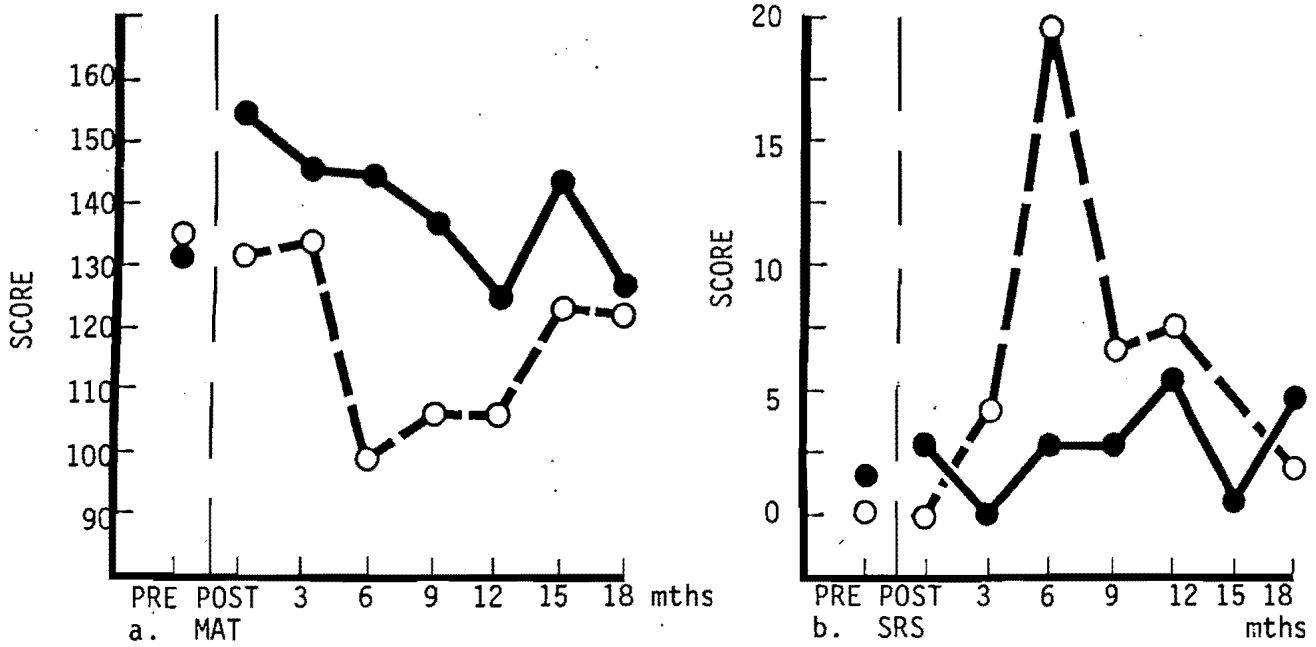
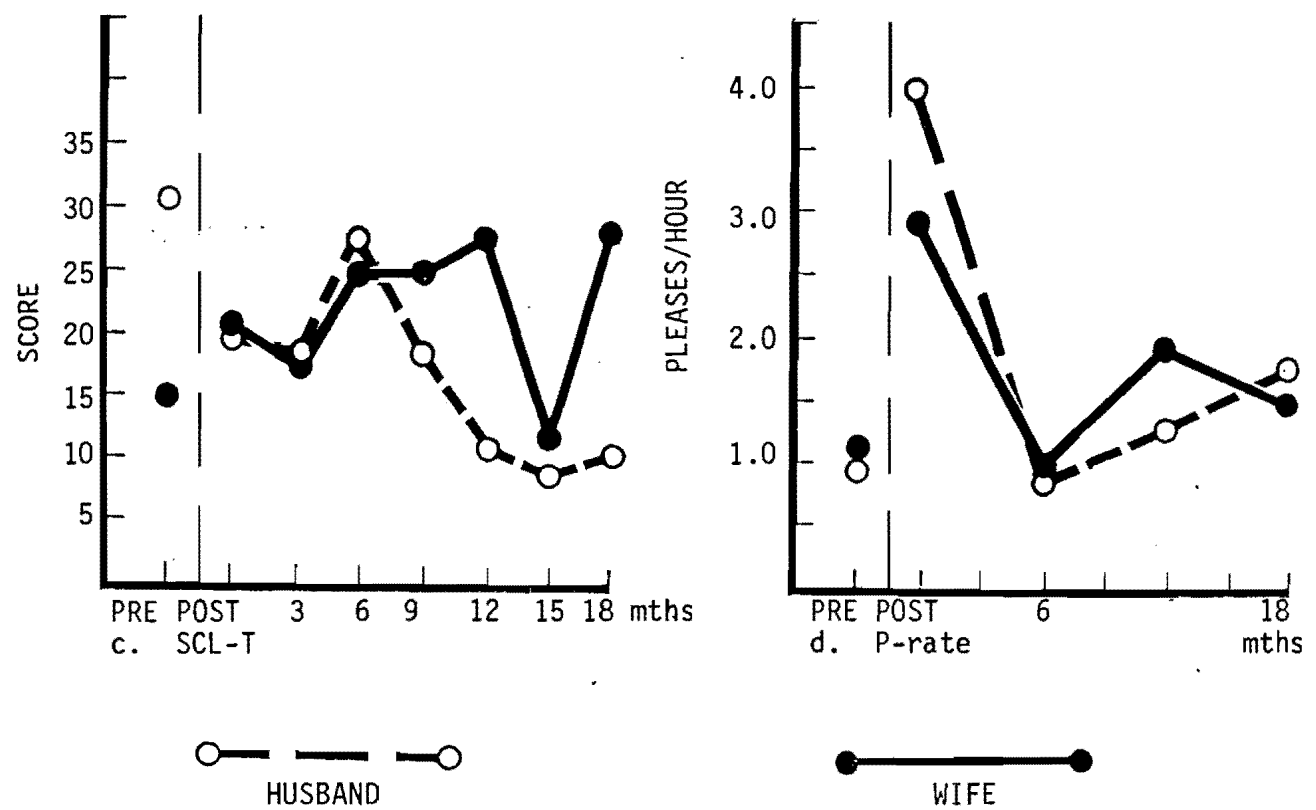


Figure 5.12. Marital Adjustment Test, Self-Rating Scale for Depression, Symptom Checklist and Spouse Observation Checklist scores for Couple NM3 over an 18-month follow-up.



Couple NM4. Results for Husband and Wife NM4 are shown in Figure 5.13. The wife was a highly intelligent, assertive woman, with no obvious personality difficulties. The husband had difficulty expressing feelings, with a tendency toward negative thinking and coercive behaviour, including use of physical violence against other men.

During training the couple impressed as being loving and supportive. Pretraining scores confirmed this impression, with reported MAT scores well above the mean for happy couples, as established in Study 1, (Figure 5.13a) and a D-rate well below the mean for happy couples (Figure 5.13d). Behaviour management programmes for this couple were designed to assist them with task accomplishment.

During follow-up there was a gradual increase in MAT scores, with several near maximum scores. Gains in P-rate were maintained at a high level (Figure 5.13b), and there was a gradual decrease in SCL scores for both husband and wife (Figure 5.13c).
Following training, there was an increase in D-rate. At 18 months, the wife's D-rate score (.31) exceeded the mean for happy couples.

At the debriefing, they reported an awareness of the increase in D-rate scores, and explained this in terms of their adjustment to a new set of working hours and conditions. They made it a rule, however, to deal with *Displeases* and bad moods at the earliest opportunity.

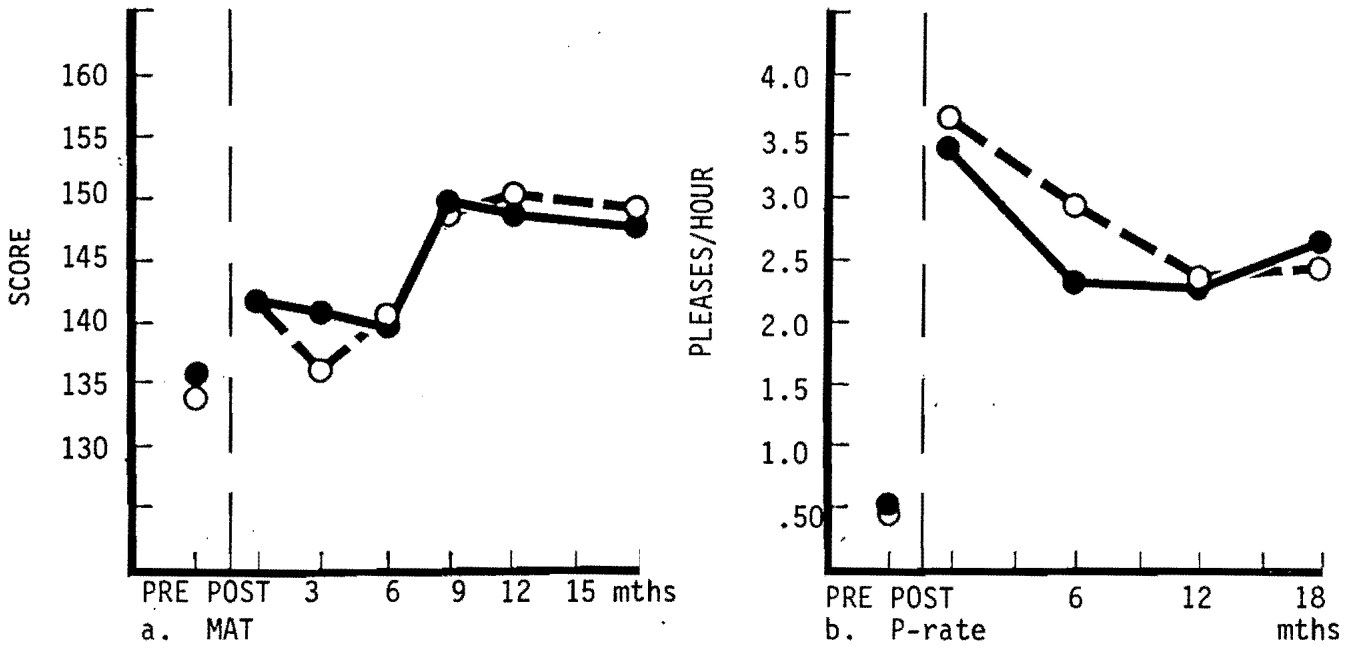
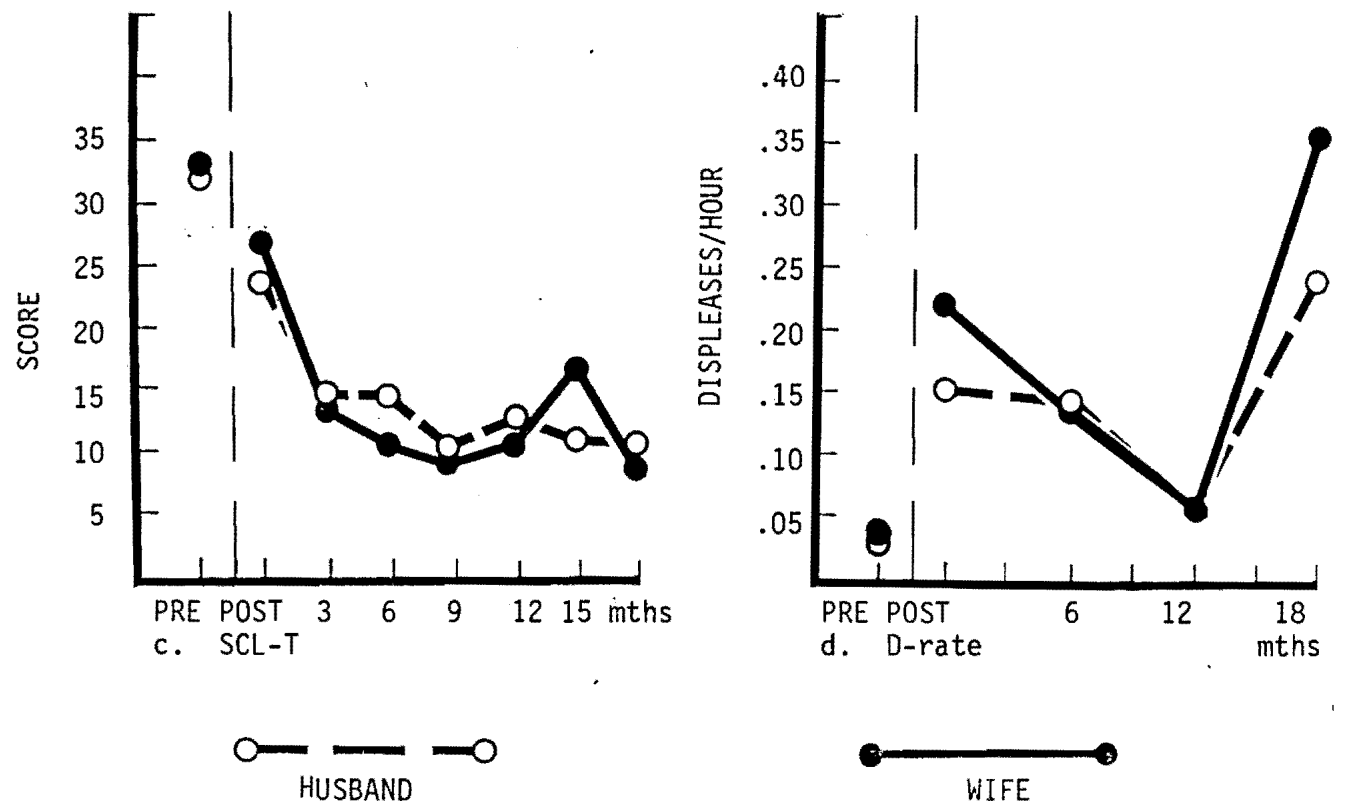


Figure 5.13 Marital Adjustment Test, Spouse Observation Checklist and Symptom Checklist scores for Couple NM4 over an 18-month follow-up.



Couple NM5. Results for Husband and Wife NM5 are shown in Figure 5.14. The wife lacked confidence in her own abilities, and suffered a high level of anxiety. The husband used humour excessively. In part this was attention-seeking, but it also served to prevent anything but superficial discussion. Initially, both reported MAT scores which approximated happy husband and wife means as established in Study 1 (Figure 5.14a), and relatively high P-rates (Figure 5.14c), while the wife reported a high SCL score (Figure 5.14b).

During training, the wife was taught deep muscle relaxation. Both husband and wife worked on self-modification programmes. The wife modified the way in which she communicated with her husband when they came together at the end of the working day, and he modified his erratic time keeping behaviour. The husband's tiresome "humour" was ignored by the group leaders, and group members began to point out to him that it was attention-seeking behaviour. As his expressive skills improved, the behaviour became less of a problem. Without improved communciation skills it is probable that this husband would have gradually alienated his wife. She had already begun to withdraw from him as evidenced by her non-communicative behaviour when he arrived home each day, but his attention-seeking behaviour was maintained on an intermittent schedule of reinforcement.

During follow-up, there was an upward trend in MAT scores, mirrored by a downward trend in SCL scores. The dramatic immediate posttreatment effect on P-rate scores was not maintained, and scores for both husband and wife fell below baseline level. Nevertheless, D-rate and Prop P scores (both shown in Appendix III) excelled the means found for happy husbands and wives in Study 1.

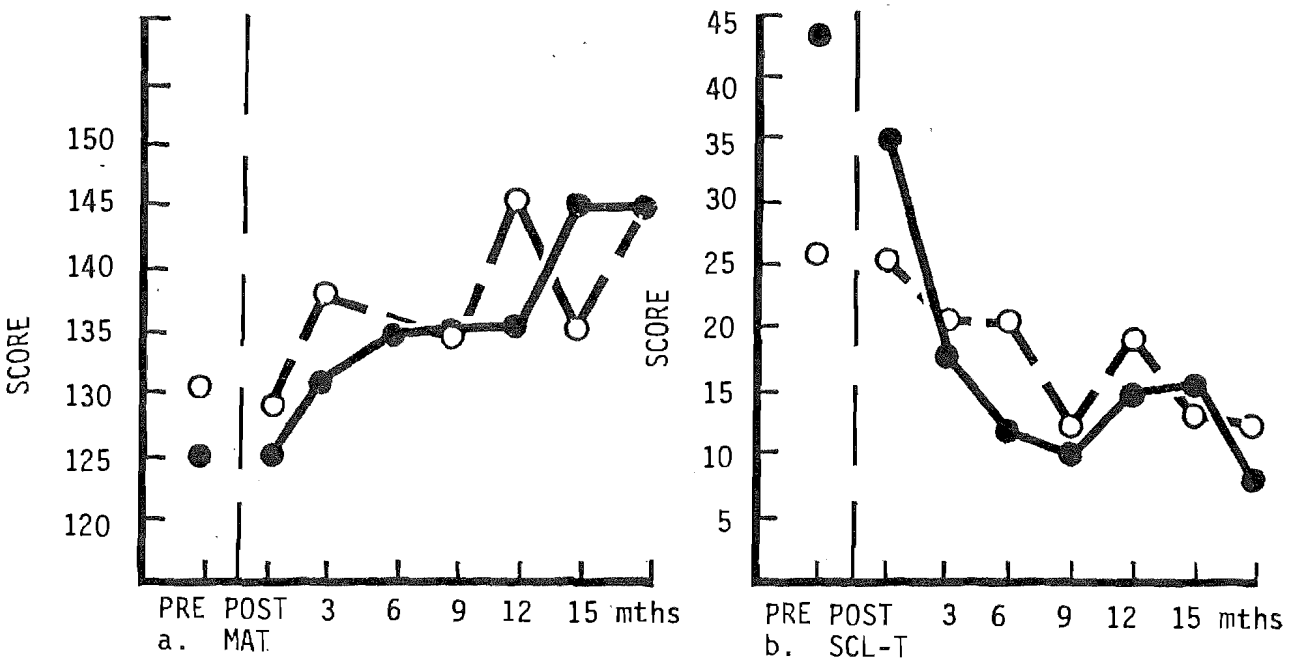
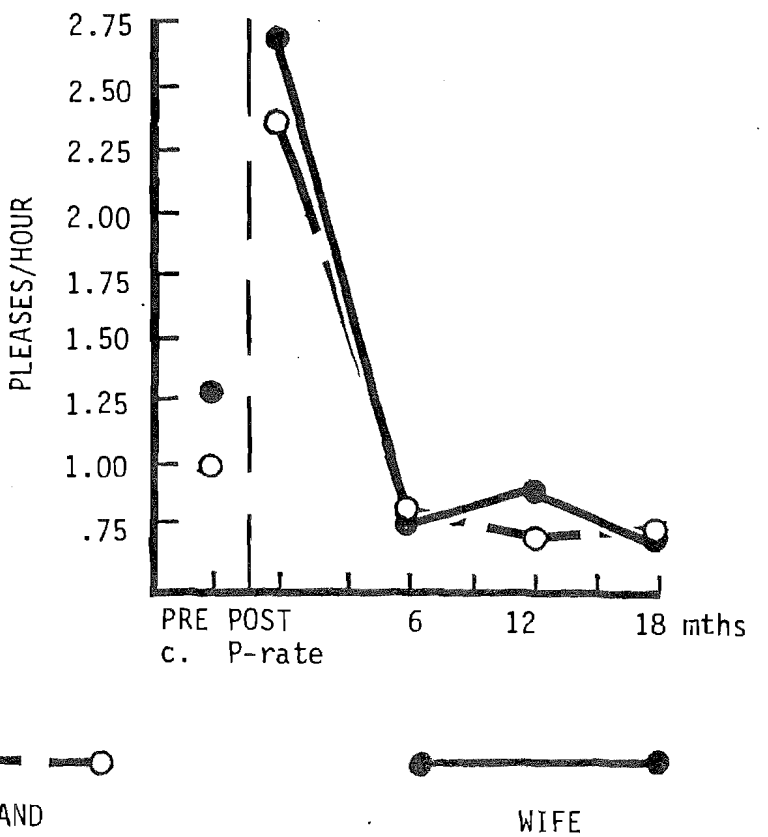


Figure 5.14. Marital Adjustment Test, Symptom Checklist and Spouse Observation Checklist scores for Couple NM5 over an 18-month follow-up.



At the debriefing, the couple reported that many of the behaviours that had been counted as *Pleases* were now taken for granted. In addition, throughout the research period, they had intensely disliked the task of counting *Pleases* and *Displeases*. The drop in P-rate may well reflect their lack of interest in the task, more than it reflects the actual exchange.

Group NM6. Results for Husband and Wife NM6 are shown in Figure 5.15. The husband had been married previously, and was reluctant to take part in the training. Pretraining data suggested that this was a high risk marriage. The wife's MAT and D-rate scores were inferior to the means reported by distressed wives in Study 1 (Figures 5.15 a and c respectively), while the ACQ couple score bordered on the distressed as established in Study 1 (Figure 5.15b). The wife impressed as being highly critical, depressive, and aggressive, while her husband described her as "manic-depressive". She appeared to hold the belief that a child would make her life complete.

During training, the husband was extremely self-conscious, and was unco-operative during the first session. Exercises which he had refused to do in the group were practised following the departure of the other couples. The wife was seen to be obsessive and overdemanding regarding tidiness. This resulted in the husband's being provided with little approval, and excessive disapproval. Behaviour management programmes were designed to assist the couple alleviate this problem. The couple was somewhat of a misfit in the group, the wife admitting her discomfort at being surrounded by so much apparent happiness and enthusiasm.

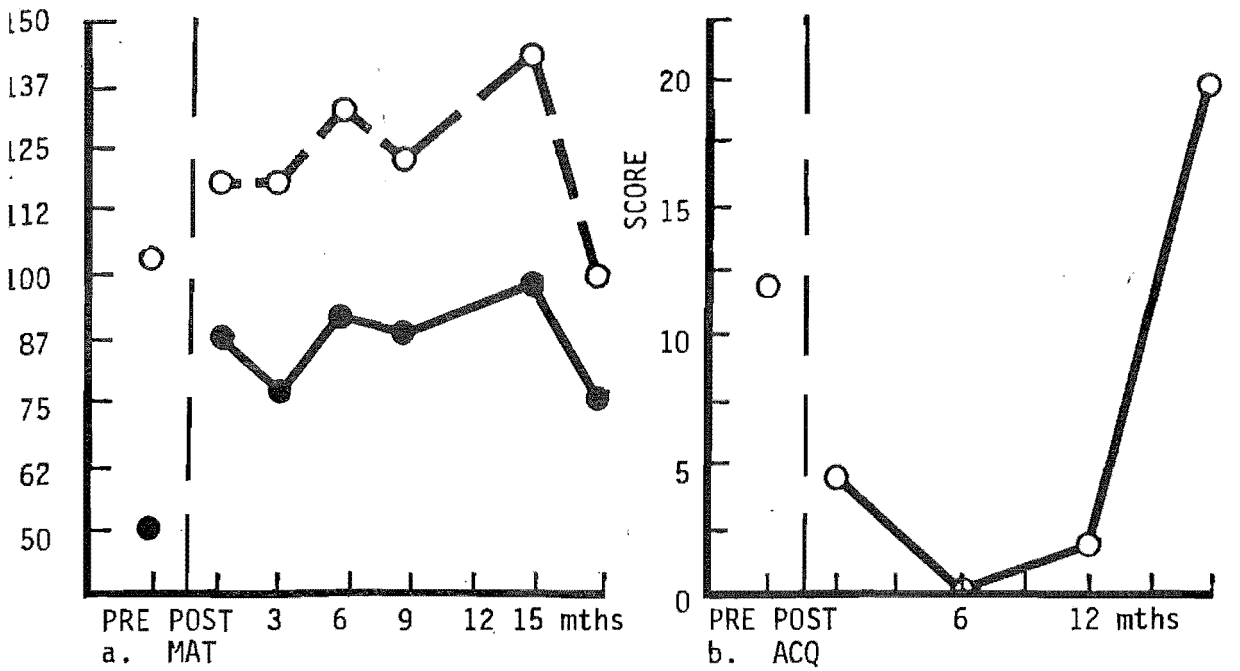
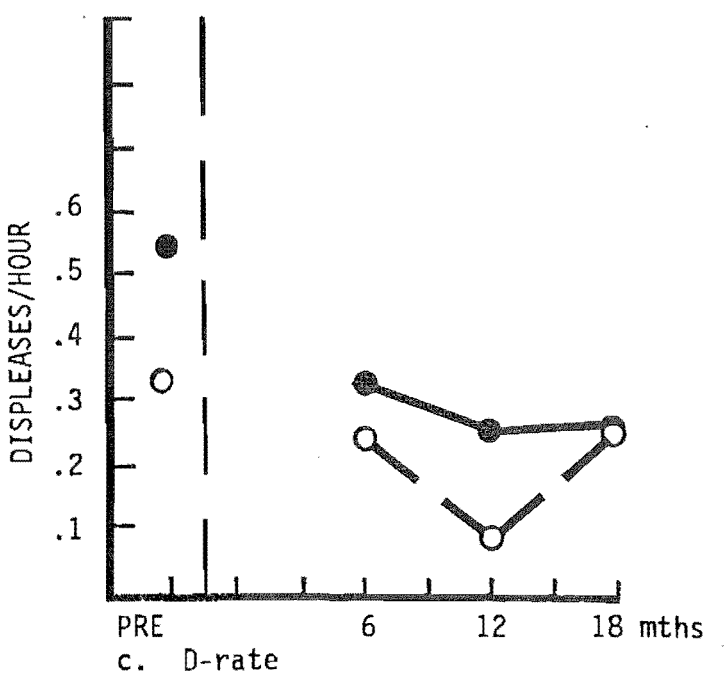


Figure 5.15. Marital Adjustment Test, Areas of Change Questionnaire, and Spouse Observation Checklist scores for Couple NM6 over an 18-month follow-up.



During follow-up, posttraining gains in MAT and D-rate scores were maintained, with the exception of a drop in MAT scores at 18 months. The ACQ score, however, increased to 20 at 18 months, well into the distressed range.

At debriefing, the couple explained that the time of the 18-month assessment was a time of crisis for them, and that it had been so atypical that they would not have collected data had they not been instructed to do so regardless of circumstances. Their first child was a few weeks old and the husband had been suffering from feelings of rejection. They believed, however, that the time of crisis had past, were pleased with their ability to handle it, and had every confidence in their ability to prosper as a unit. The wife continued to provide insufficient approval without prompting. The husband, however, had learned to prompt his wife about this behaviour, and they recognized the destructiveness of excessive criticism, both to their relationship and to the development of their child's personality.

Couple NM7. Results for Husband and Wife NM7 are shown in Figure 5.16. Both husband and wife were passive, with the wife lacking confidence in herself, and the husband being non-communicative. The wife's family of origin, which later became known to the author, included an overprotective mother who controlled her children by evoking feelings of anxiety and guilt in them, an emotionally unresponsive father, and a severely neurotic brother. Pretraining scores on most measures indicated a rather nondescript relationship with low activity levels, and low behaviour exchange rates. The Proportion Pleases, however, was .98 for both husband and wife (see Appendix III).

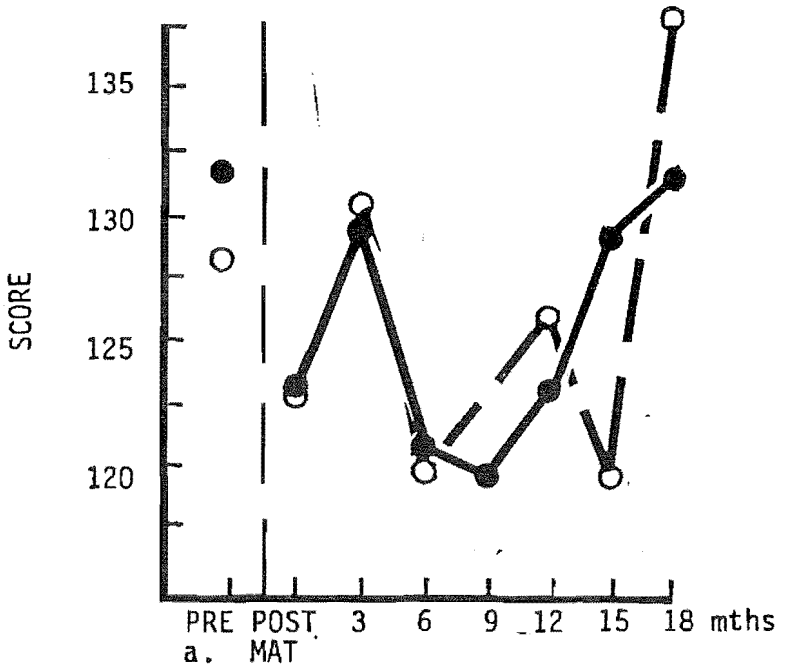
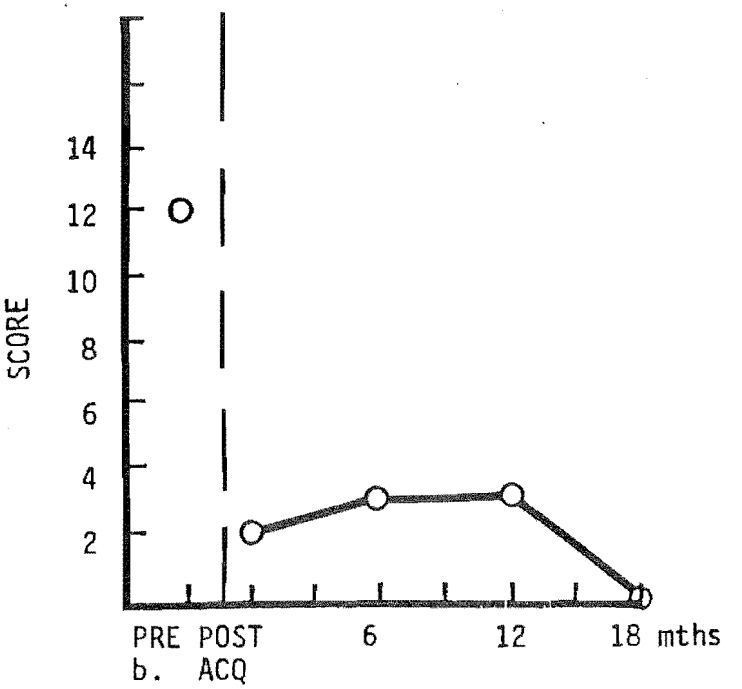


Figure 5.16. Marital Adjustment Test and Areas of Change Questionnaire scores for Couple NM7 over an 18-month follow-up.



Only the initial ACQ score which bordered on the distressed as established in Study 1 (Figure 5.16b) indicated that something might be amiss.

During training the couple worked well on group exercises and homework assignments, but were not able to suggest a behaviour management programme for themselves.

During follow-up the only noteworthy change was the decrease in ACQ scores. Activity levels and behaviour exchange rates remained relatively constant (see Appendix III).

At debriefing, the couple expressed satisfaction with the training. Both had become more assertive within the relationship, and in their dealings with others. They were also able to recognize the destructive family processes that were a feature of the wife's family of origin, and protect themselves from them. It is probable that the initially high ACQ score was largely the result of husband and wife not discussing issues. The husband in particular found that to be a difficult task, and expressed satisfaction with his improved communication skills. Following training, the couple attempted to resolve a difficult sexual problem which they had not been willing to talk about earlier.

Control Couples

Figures 5.17 to 5.23 illustrate changes in husband and wife scores over a 12-month baseline for the seven untrained couples. Process data gathered from observation of videotapes made during baseline, clinical observation during training, and self-report at debriefing are discussed for each couple in relation to baseline scores.

Couple NM8. Results for Husband and Wife NM8 are shown in Figure 5.17. The couple engaged in a great deal of overt loving behaviour. Both suffered social anxiety, and the husband had difficulty in making decisions, frequently procrastinating regarding task completion.

The sharp drop in the wife's MAT score at three months (Figure 5.17a) corresponds with a rise in her SRS (depression) score (Figure 5.17b), and reflects a difficult period in her work situation. The initially high D-rates (Figure 5.17c) were related to financial constraints immediately after marriage. This did not, however adversely affect the MAT scores.

At 12 months, there was no clear cut evidence of deterioration. While the husband's MAT score had decreased from 144 at 6 months to 128 at 12 months, it remained above the mean reported by happy husbands in Study 1.

Couple NM9. Results for Husband and Wife NM9 are shown in Figure 5.18. The wife was the dominant partner, though she had a poor self-image, particularly body-image. The husband was passive, and suffered social anxiety. The couple developed a relationship in which the wife worked while the husband stayed at home, attempting to build up a business that was not yet profitable. The wife expected certain household tasks to be undertaken by the husband, but he frequently failed to do them. While the wife usually went to bed early, the husband stayed up and worked.

The wife's growing perception of neglect, including sexual neglect is reflected in the downward trend of her MAT scores (Figure 5.18a) and the sharp drop in P-rate scores (Figure 5.18b), and resulted in her increased use of coercive behaviours.

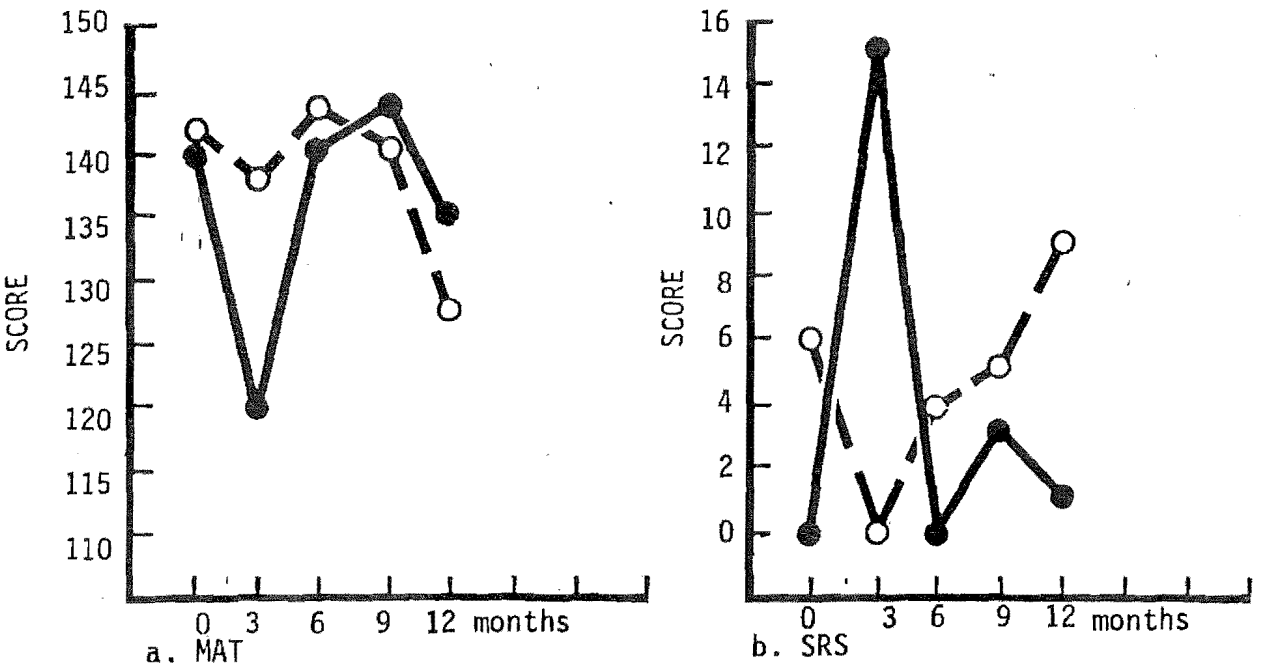
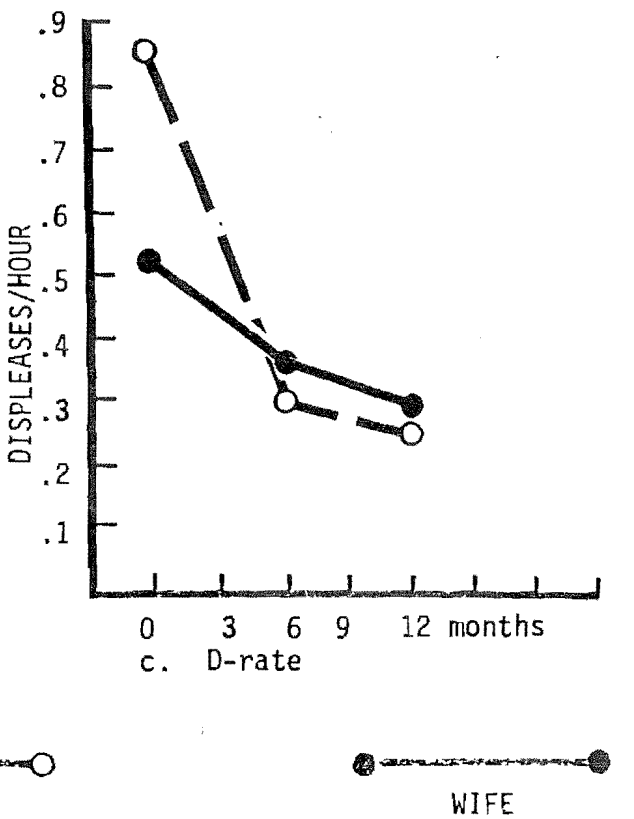


Figure 5.17. Marital Adjustment Test, Self-Rating Scale for Depression and Spouse Observation Checklist scores for Couple NM8 over a 12-month baseline.



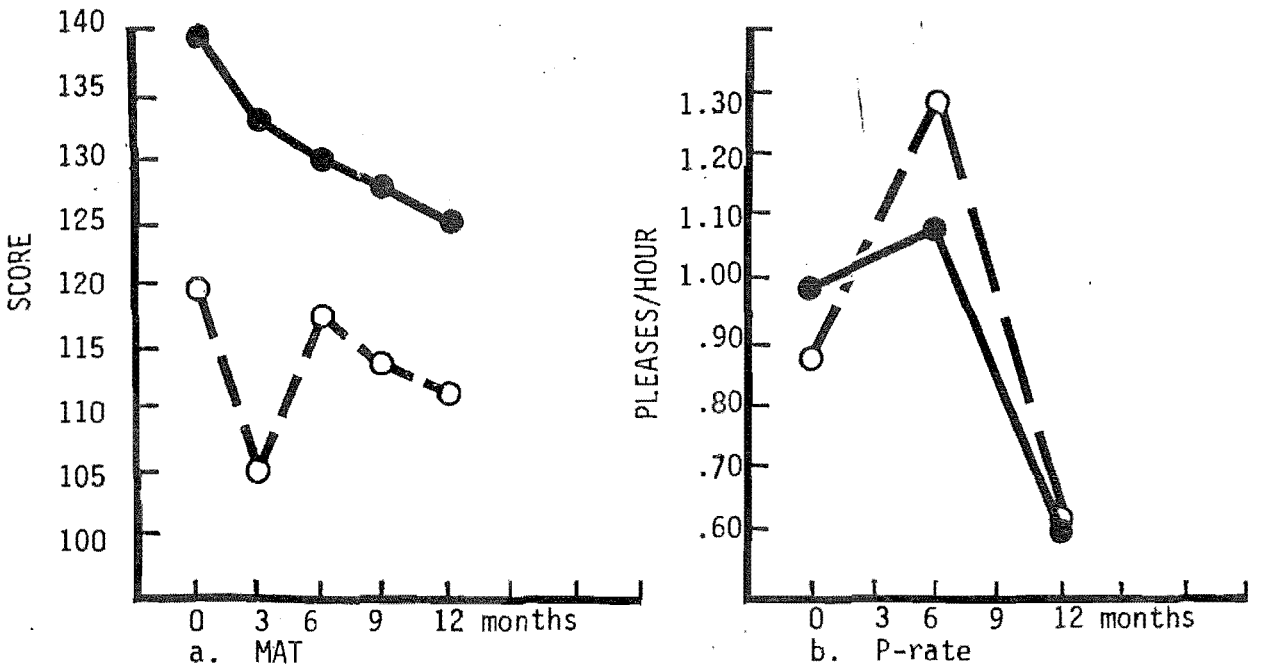
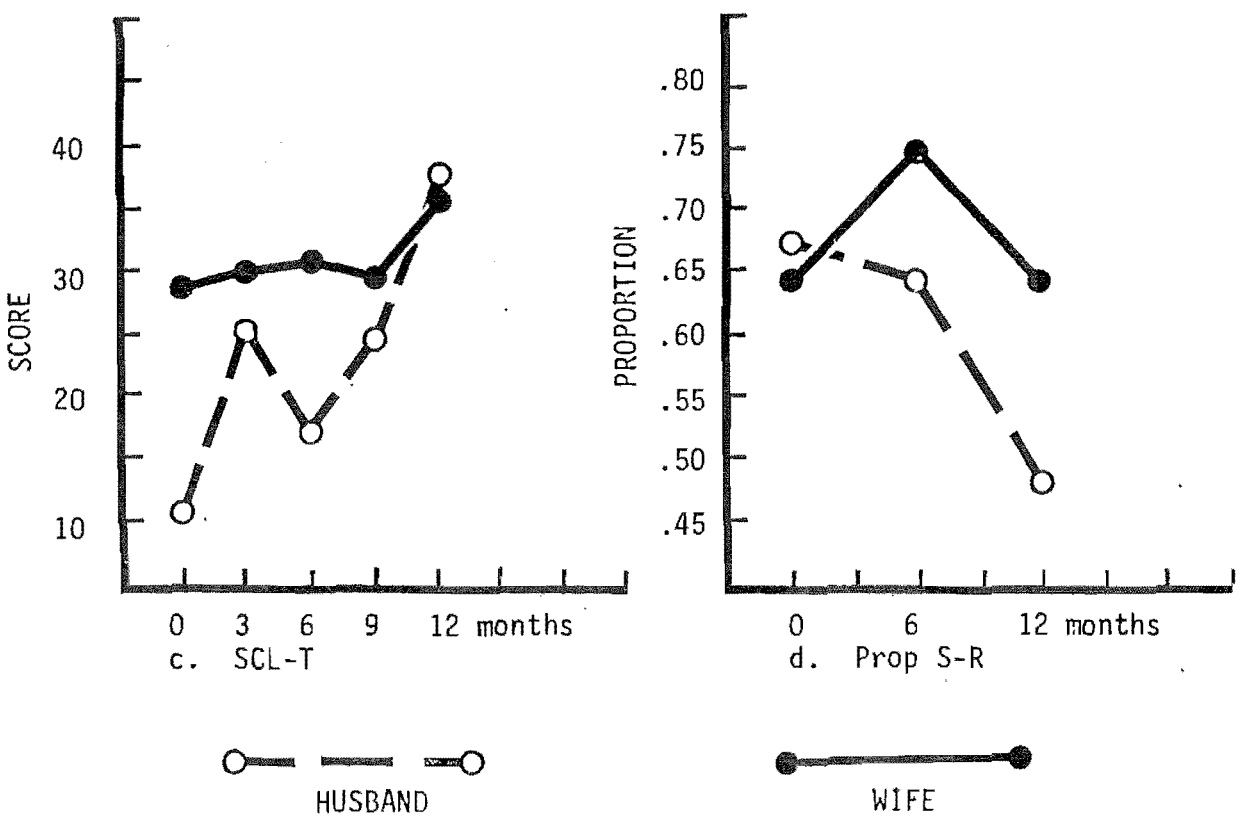


Figure 5.18. Marital Adjustment Test, Spouse Observation Checklist, Symptom Checklist and Inventory of Rewarding Activities scores for Couple NM9 over a 12-month baseline.



SCL scores (Figure 5.18c) mirror MAT scores, particularly for the husband. He was, in fact, the only newlymarried subject to demonstrate avoidance behaviour as reflected by the Prop S-R score (Figure 5.18d).

While there are some obvious signs of deterioration, neither ACQ nor D-rate scores increased over time (see Appendix III). This extremely passive husband appeared unable to acknowledge his negative feelings overtly, but they may well be reflected in his SCL score.

Couple NM10. Results for Husband and Wife NM10 are shown in Figure 5.19. The wife was insecure, with a need for a great deal of positive feedback, whereas the husband not only had difficulty giving praise, but thought it undesirable. He also believed that overt demonstrations of affection were "phoney". The pattern that developed between the partners was one whereby the husband delivered criticism and withheld praise and affection, and the wife felt put down and unloved. The more she nagged and pleaded, the more inflexible the husband's behaviour became.

This deterioration is illustrated by the downward trend in the wife's MAT scores (Figure 5.19a), a trend which is mirrored by her SRS (depression) scores (Figure 5.19c), and the marked upward trend of ACQ scores (Figure 5.19b). While this couple fits the classic coercion model, there is no evidence that the balance of behaviour exchange was affected. P-rate, D-rate and Prop-P scores demonstrated little fluctuation over time (see Appendix III).

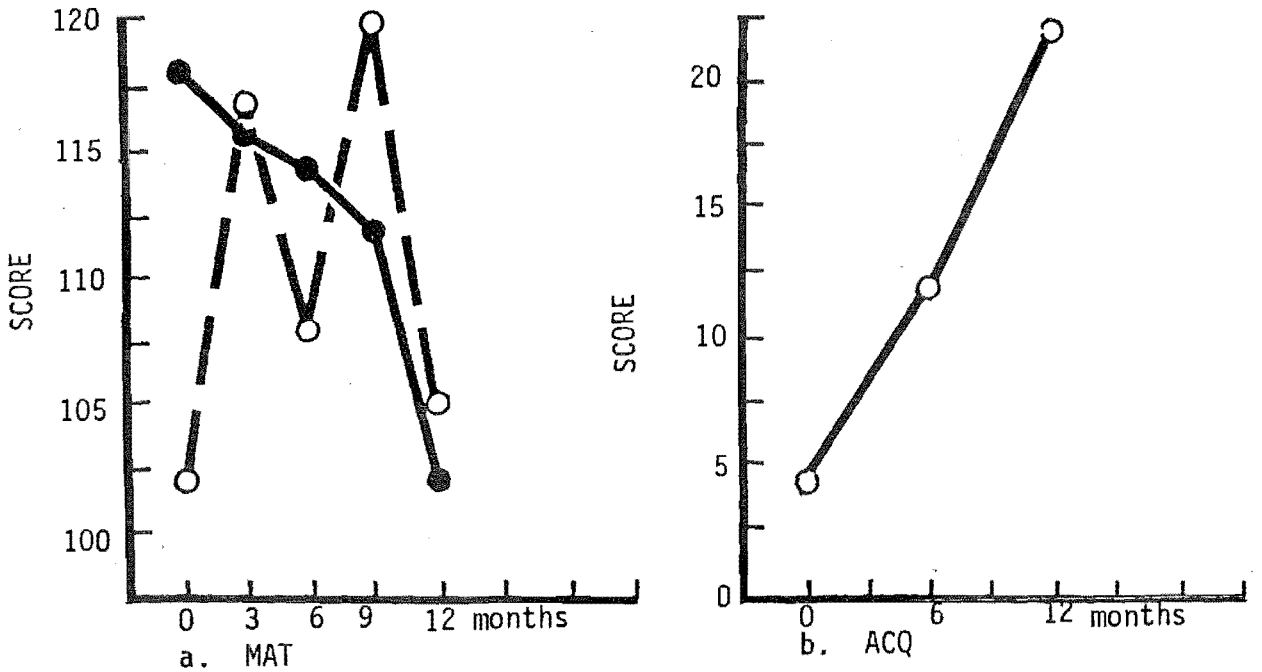
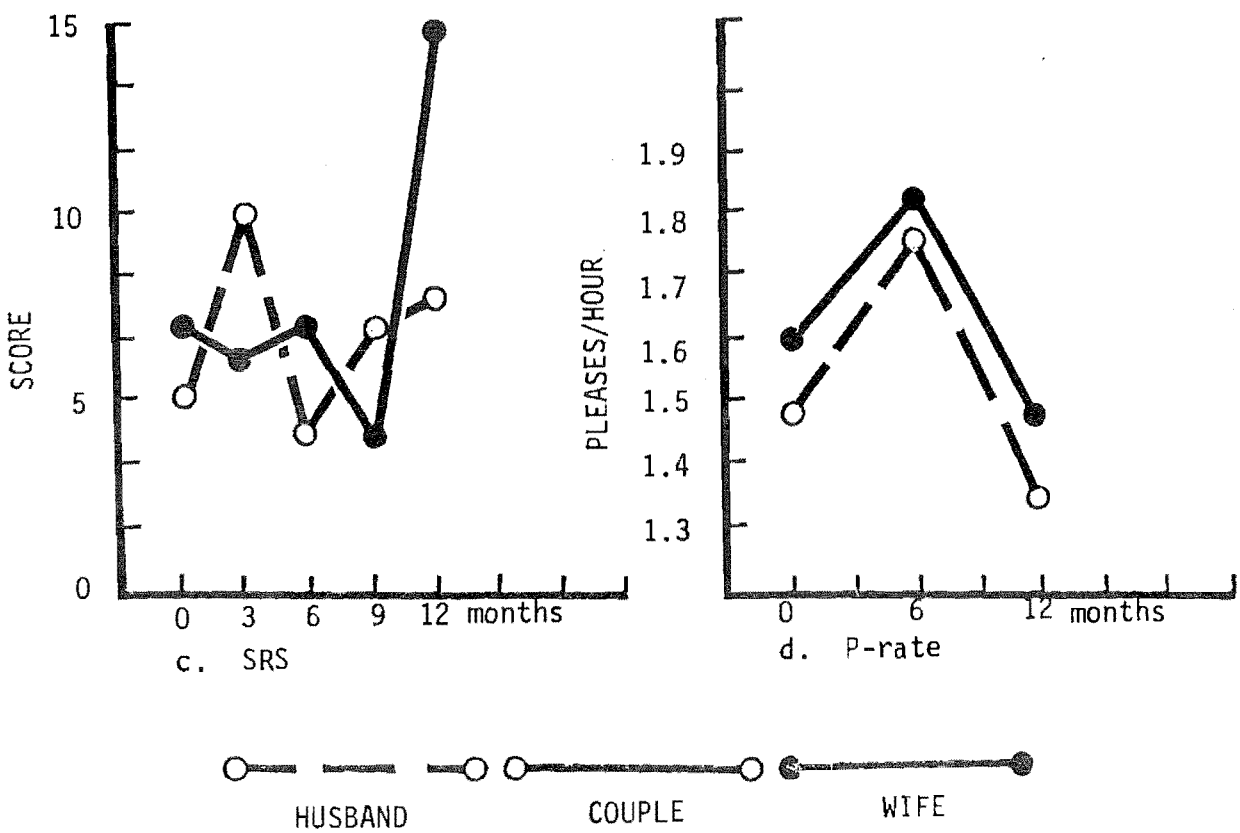


Figure 5.19. Marital Adjustment Test, Areas of Change Questionnaire, Self-Rating Scale for Depression, and Spouse Observation Checklist scores for Couple NM10 over a 12-month baseline.



Couple NM11. Results for Husband and Wife NM11 are shown in Figure 5.20. The wife gave the impression of fragility and timidity. Since childhood, she had developed poor eating habits, and suffered a phobic reaction to raw meat. The husband behaved very much as the "traditional" husband. He was prepared to take little responsibility for household duties even though his wife had full-time employment. They appeared to have little in common, with the husband engaging in many outdoor activities, while the wife preferred to knit and sew.

Throughout baseline, the ACQ score remained high (Figure 5.20c), with conflicts involving division of labour. The wife's MAT score, however, increased over time (Figure 5.20a), and her's was one of only two in this group to do so. Because the couple left town immediately after training was complete, they were not debriefed. It is, therefore, impossible to interpret the husband's 9-month MAT score. Also impossible to interpret is the atypical behaviour exchange pattern which developed, with D-rates reaching distressed couple levels as established in Study 1 (Figure 5.20d), and an extremely high P-rate for the wife at 12 months (Figure 5.20b).

This was a somewhat less than egalitarian partnership which, prior to training, was showing some signs of trouble. In view of the degree of ambiguity involved, it is unfortunate that the couple could not be debriefed.

Couple NM12. Results for Husband and Wife NM12 are shown in Figure 5.21. The wife appeared to have a significant amount of difficulty with social interactions. Her responses to people other than her husband, were often unnecessarily aggressive. She appeared somewhat obsessive about housework.

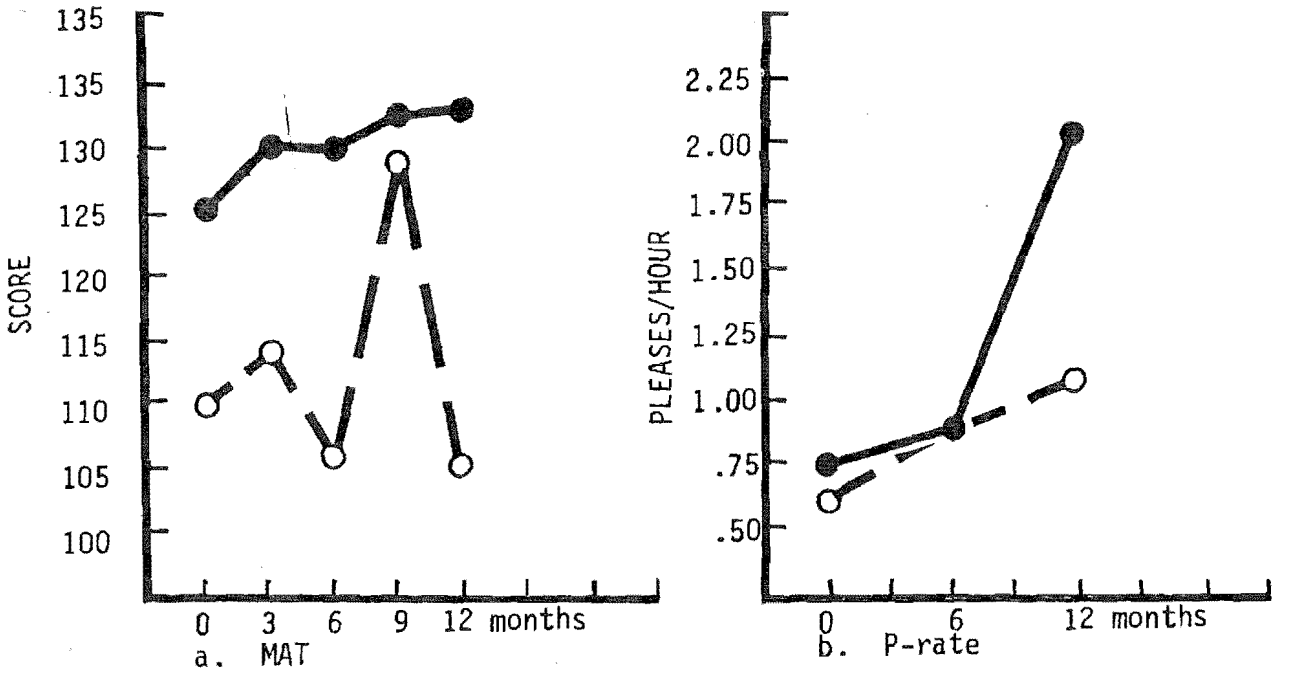
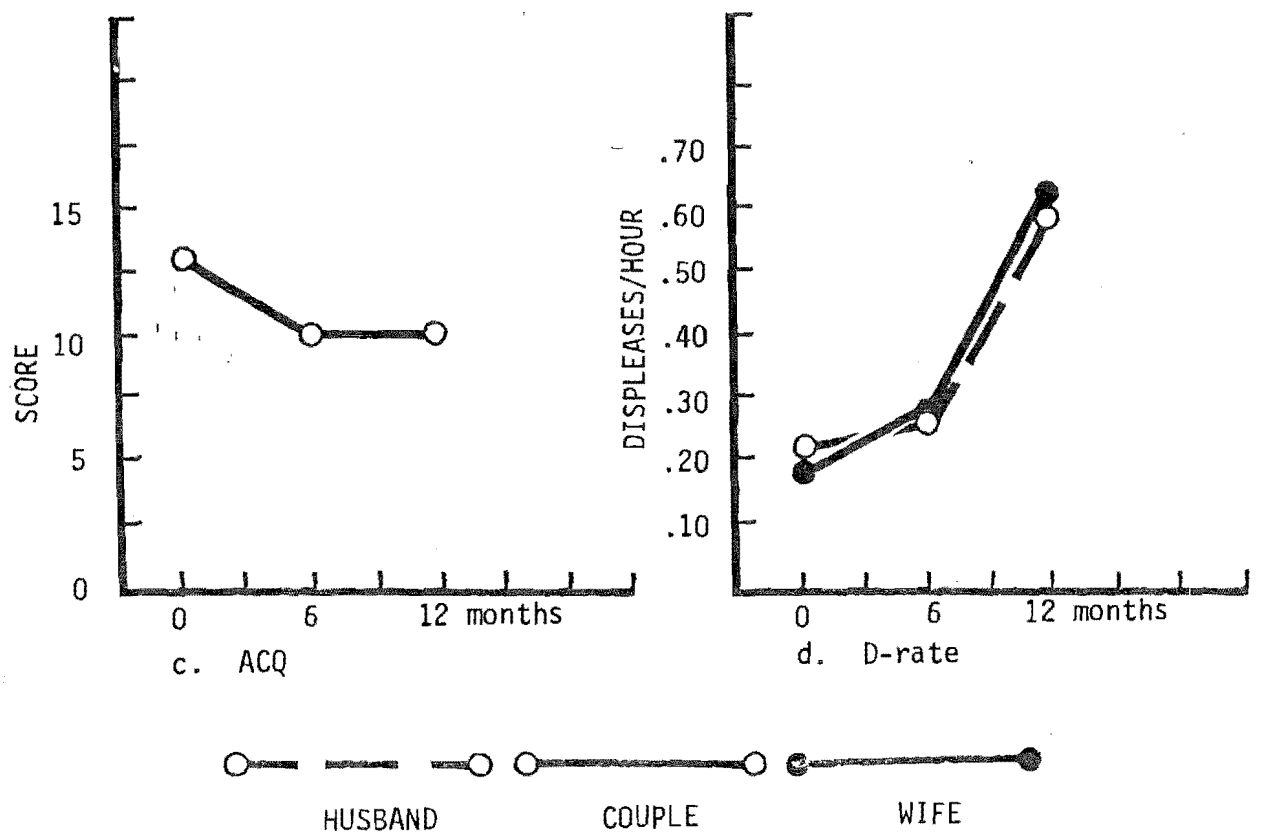


Figure 5.20. Marital Adjustment Test, Spouse Observation Checklist and Areas of Change Questionnaire scores for Couple NM11 over a 12-month baseline.



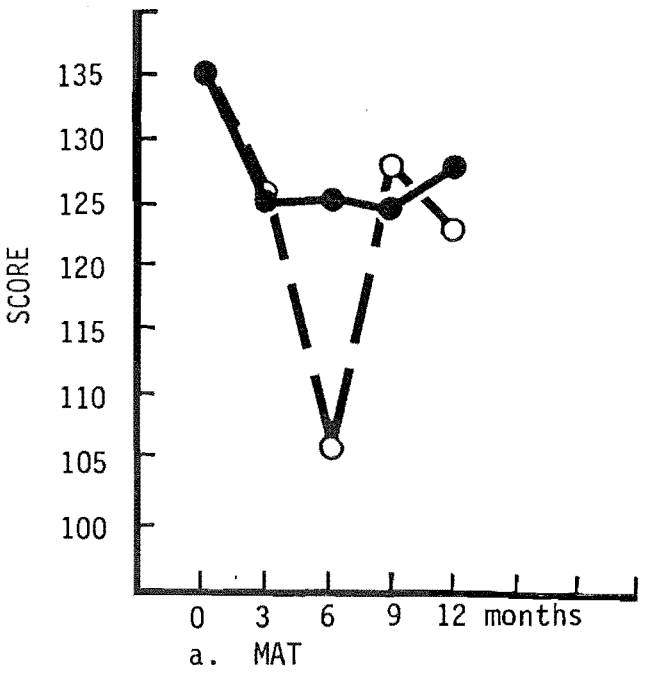
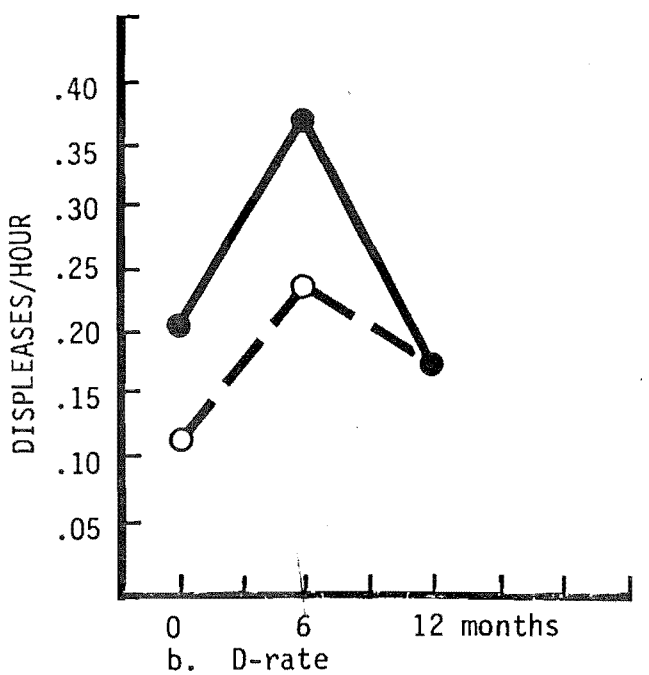


Figure 5.21. Marital Adjustment Test and Spouse Observation Checklist scores for Couple NM12 over a 12-month baseline.



HUSBAND

WIFE

The husband was patient and assertive. Within the relationship, the pattern that developed was one in which, when the wife became flustered about not being able to cope, her husband would calmly take over. Others in her social environment tended to goad her because of her tendency to become easily flustered.

During baseline, scores on all measures remained relatively stable with the exception of the husband's MAT score at 6 months (Figure 5.21a). This was explained as being related to pressures at work. Both husband and wife recorded an increase in D-rate at that time (Figure 5.21b), but the wife's MAT score remained unaffected. There was no evidence of deterioration over the 12-month baseline period.

Couple NM13. Results for Husband and Wife NM13 are shown in Figure 5.22. The wife was intelligent, stable and tolerant. The husband was consistently time-pressured, demanded perfection of himself, and was extremely self-critical. The concepts of *Pleases* and social rewards were difficult for him to grasp, and their behavioural expression difficult for him to identify. If something were not outstanding, it was not noteworthy.

Baseline data indicates that this couple was on a very low schedule of pleasing behaviours (Figure 5.22c), yet the husband's MAT scores increased over time (Figure 5.22a). The upward trend of his SCL scores, however, suggest that his time-pressured behaviour and his self-criticism were taking a toll on his health (Figure 5.22b). In all probability, they would eventually take a toll on the relationship. That they appeared not to have done so was probably due to his wife's placid influence. A letter from this couple 18 months after the completion of training indicated that they had adopted a very different lifestyle with the husband having learned to avoid

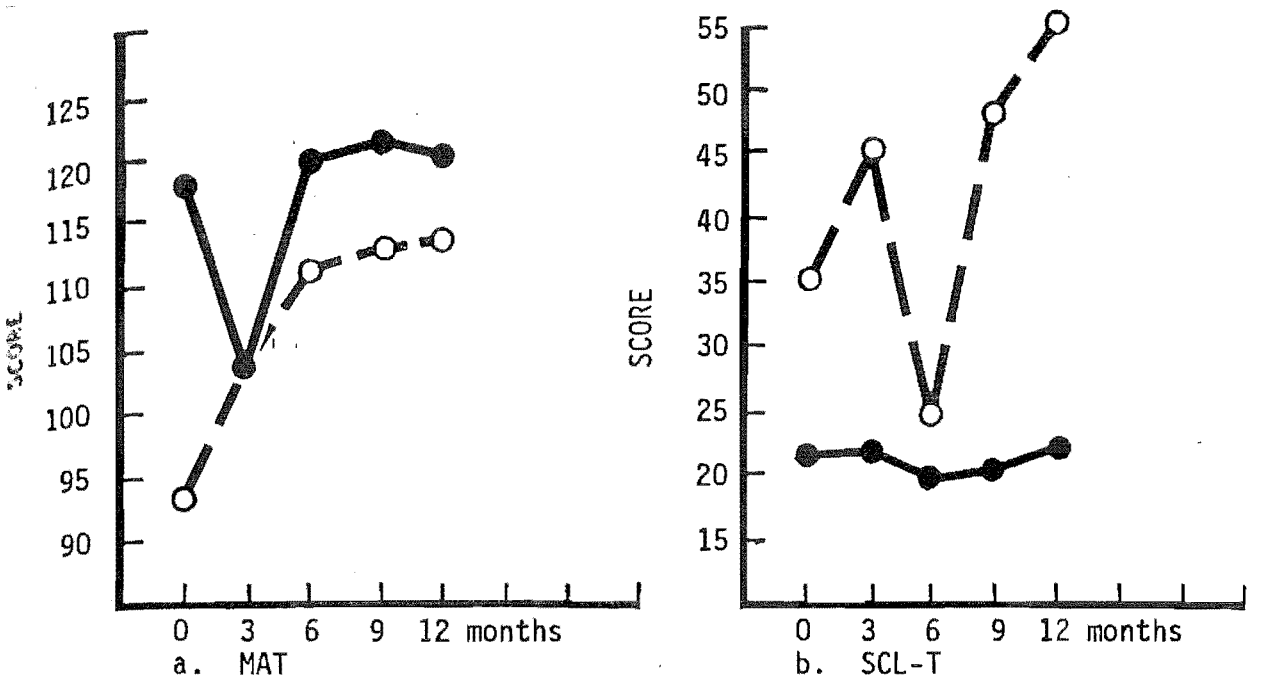
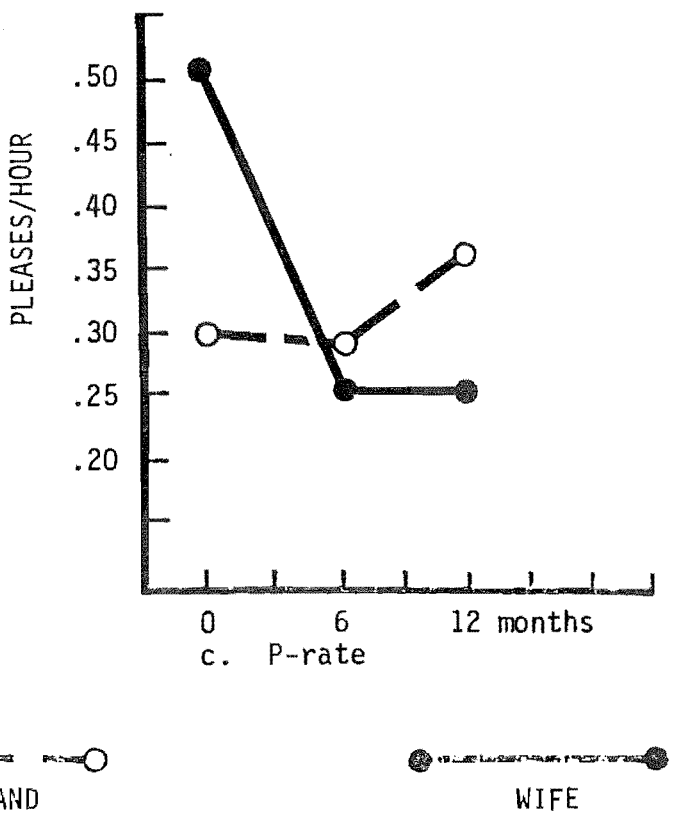


Figure 5.22. Marital Adjustment Test, Symptom Checklist and Spouse Observation Checklist scores for Couple NM13 over a 12-month baseline.



continuous time-pressure.

Couple NM14. Results for Husband and Wife NM14 are shown in Figure 5.23. The wife was highly anxious, unable to express or even identify feelings, and having an extremely poor self-image. The husband had been married previously. He, too, had a poor self-image, with a low frustration tolerance that led to aggressive, and even violent, behaviours. The relationship was a distressed one when the couple joined the research programme, three months after their marriage.

During baseline, the wife was exposed to physical abuse, and, therefore, some counselling was provided prior to the training in order to assist the husband handle his emotions more constructively and to assist the wife reduce her anxiety.

With the exception of the ACQ (Figure 5.22b), scores do not adequately reflect the fact that, by the time the couple entered training, they were highly distressed and had developed very maladapative patterns of behaviour. They were particularly difficult to work with, reinforcing the clinical impression that the most difficult couples to work with are those couples where both partners have poor self-esteem.

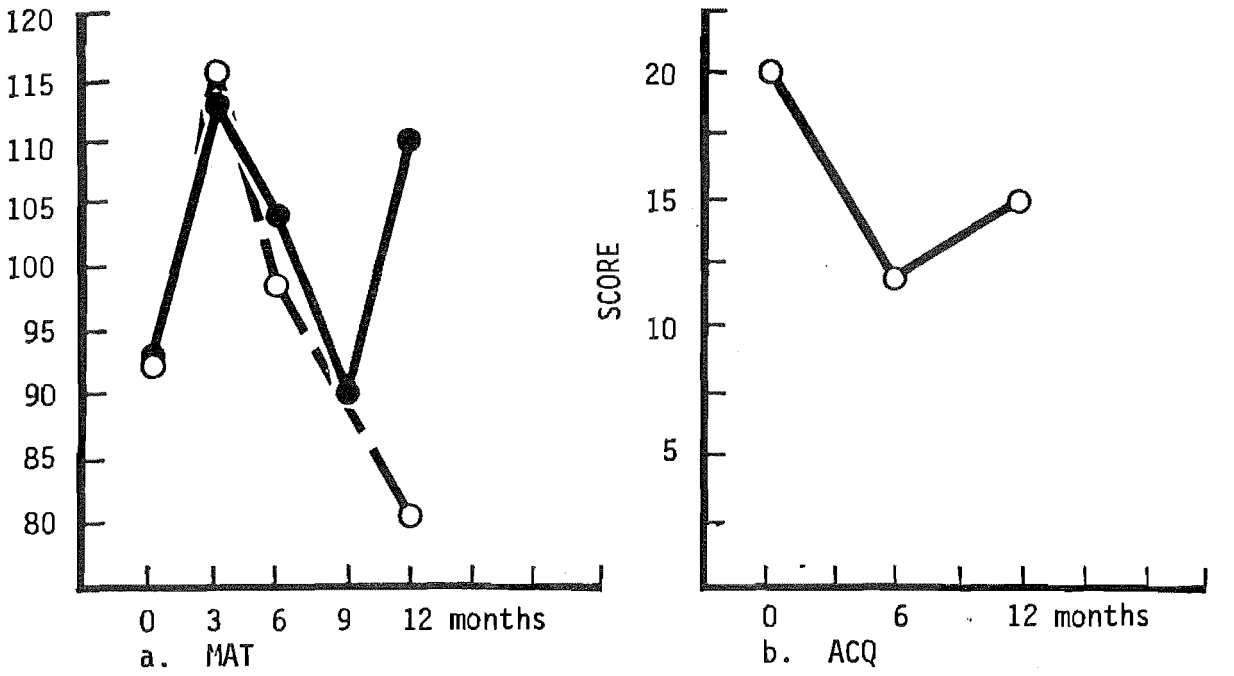
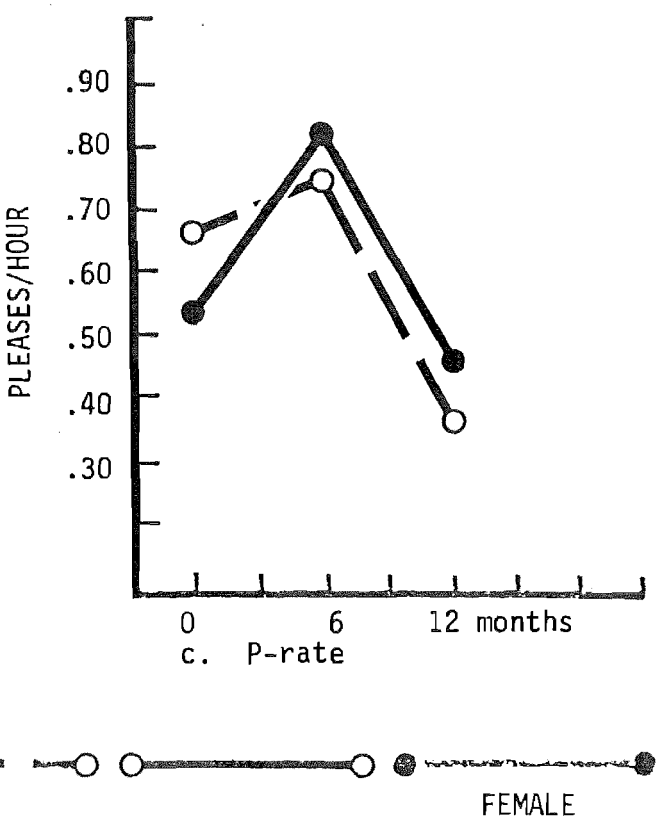


Figure 5.23. Marital Adjustment Test, Areas of Change Questionnaire and Spouse Observation Checklist scores for Couple NM14 over a 12-month baseline.



CONCLUSIONS

Despite the apparent equality of the two groups initially, conclusions are necessarily tentative, since the 14 couples were not randomly assigned to the two groups. It would appear that the first two years of marriage are not easy ones. Couples often face major changes, including the birth of a first child. For two trained couples, the birth of a child was a disruptive, though welcome, event. External factors, too, impinge upon the relationship, and can affect the happiness of both partners. The impact of such events has been clearly documented in the preceeding Results section. Despite the various life changes, external pressures, and the necessity to adapt to partner behaviours, analysis of group data with the exception of MICS data showed that Experimental couples performed significantly better than did Control couples on measures known to discriminate happy and unhappy couples. Analysis of individual couple data showed that four of seven Control couples were demonstrating some evidence of deterioration at 12 months, whereas only one trained couple was demonstrating similar signs at 18 months, and this soon after the birth of a child.

There was a general trend for SCL scores to decrease over time in the trained group, and no individual's scores increased over time. There was no such downward trend in the Control group, and two Control husbands reported an upward trend in their scores. This suggests that the Experimental group experienced this period as less stressful than did the Control group. The finding reinforces the proposal made in Chapter IV regarding the value of relationship skills training in reducing family health problems.

While durable gains were made by the Experimental group of couples on MAT, ACQ, Prop P and SCL scores, there was evidence of deterioration in some Control couples. This evidence, however, provides only limited support for existing theory. In general, avoidance behaviour was not observed, except in the case of Husband NM9, where there was no evidence of an increase in conflict. From this, and clinical observations, it is suggested that some couples engage in avoidance behaviour without ever experiencing a high degree of conflict. This is probably related to a high anxiety level, with consequent low tolerance for conflict.

Theory predicts that an increase in the exchange of displeasing behaviours will be observed. This, however, was observed in only Couple NM11, and that when the Please Rate was also increasing. The relationships of Couples NM9, NM10, NM14 and to a lesser extent NM11 appeared to be deteriorating, although the pattern of deterioration did not fit the behavioural model.

Whereas, behavioural marital theory treats marital distress as a spontaneous happening within the confines of the relationship, the present study suggests that the probability of distress and the types of patterns likely to occur are predictable, given knowledge of the past social experiences of both partners. All individuals take behaviours into marriage which may reinforce functional or dysfunctional partner behaviour. For example, several husbands were found to have communication skills deficits such that they reinforced their wives' feelings of insecurity (Couples NM1, NM2, NM3, NM5, NM7, NM9, NM10 and NM14). Experimental husbands' communication skills increased significantly following training and deterioration within these relationships was not evident.

control relationships in which this pattern occurred, however, showed clear evidence of deterioration. Despite there being no statistically significant sex differences within the newlymarried groups, the apparent deficits, as observed by the author in the communication skills of newlymarried husbands as compared to newlymarried wives may be clinically significant and a major contributing factor to marital distress. This difference is most probably culture-bound and related to parenting style.

While no significant changes were found when communication was evaluated using the MICS, both the author and the couples concerned were aware that communication between partners improved following training. It is possible that the MICS, repeatedly shown to be valid in discriminating happy from unhappy couples and to be sensitive to therapy effects, is not sensitive to relationship enrichment effects. Much of the improved communication between partners related to the sharing of feelings, not a category of communication specifically identified within the MICS. Margolin and Louscher (1978) were also unable to show consistent communication improvement in nondistressed couples following training.

When making videotapes for MICS analysis, all couples were asked to discuss an issue which required their decision. It was observed that trained couples tended to use the opportunity to problem-solve more contentious issues than did untrained couples. For example, trained couples often chose topics which required behaviour change on the part of one or both partners, whereas untrained couples most often chose topics such as where to go on vacation or whether or not to make a particular purchase. Even those untrained couples who were obviously having problems chose not to discuss them on video.

It appears that the problem of marital distress can be ameliorated in more than one way. Couples experiencing distress can be helped to reduce the level of distress, as shown in Chapter IV. Newlymarried couples can be taught facilitative behaviours that reduce the probability of distress, at least in the short term, as demonstrated by the present study. Furthermore, it may be possible to reduce the incidence of individual problems such as anxiety and overlearned poor self-esteem simply by making people aware of their likely effect on relationships. Practical steps that can be taken in this area include parent training, and social education in schools and community colleges. The present experiment is seen as a simple first step in the study of prevention of marital distress.

CHAPTER VI

CONCLUSIONS

Three separate studies investigated, first, the behavioural model of marital distress as evaluated by a multi-dimensional battery of measures, second, the treatment of marital distress using a structured behavioural-based group training programme and, third, the prevention of marital distress by extending the same training programme to a group of newlymarried couples.

THE BEHAVIOURAL MODEL OF MARITAL DISTRESS

In general, the results of Study 1 support the behavioural model of marital distress which identifies the failure of partners to exchange a sufficiently high number of *Pleases* relative to *Displeases*, a failure of partners to resolve conflict because of an inadequate reportoire of conflict-resolution skills, and the development of avoidance behaviours as spouses become less rewarding to each other. Consistent with previous investigations, marital distress was shown to be related to a low exchange of *Pleases* relative to *Displeases* (Birchler et al., 1975; Jacobson et al., 1980; Margolin, 1981), and *Pleases* were more likely to be reciprocated by nondistressed than by distressed couples (Jacobson et al., 1980, Wills et al., 1974). Also consistent with earlier findings (Birchler and Webb, 1977) marital distress was shown to be related to the level of conflict, as evaluated by the Areas of Change Questionnaire (ACQ), and to shared activities, as evaluated by the Inventory of Rewarding Activities (IRA).

The Relative Importance of Negative Components

A stronger relationship of negative rather than positive behaviours to marital distress has been repeatedly shown (Barnett and Nietzel, 1979; Birchler et al., 1975; Gottman, 1980; Gottman et al., 1977; Jacobson et al., 1980; Wills et al., 1974). Investigations of such a relationship have been confined to those behaviours evaluated by the Spouse Observation Checklist (SOC) and the Marital Interaction Coding System (MICS), the two most widely researched measures. While, in contrast to previous investigations, the present study was not able to show that distressed couples reciprocated *Displeases* at a higher rate than did nondistressed couples, other evidence of the importance of negative behaviours as related to marital distress was found. The level of conflict as evaluated by the Areas of Change Questionnaire (ACQ) and the Displease Rate were the two variables that consistently discriminated distressed couples, husbands, and wives from nondistressed couples, husbands, and wives, respectively. The Negative Verbal and Total Negative scores of the MICS correlated significantly with the Marital Adjustment Test (MAT) ($p<.005$), while Problem Solving and Positive Verbal did not. Results of the present study showed that the strong relationship between negative behaviours and marital distress applied also to those behaviours upon which conflict focused, as evaluated by the ACQ. The ACQ was, in fact, found to be the most powerful discriminating and predictive of all the self-report and quasi-observational variables.

Sex Differences

An earlier study (Wills et al., 1974) reported sex differences in the relative importance of instrumental and affectional pleasing, but not displeasing, behaviours. Results of the present study suggest further sex differences.

Regression analyses point to differences in the relative importance of pleasing and displeasing behaviours for husbands and wives after the ACQ had accounted for a major portion of variance in MAT scores. The MAT was found to be a powerful discriminator of distressed and nondistressed wives, while not appearing in the discriminant function for husbands. In discriminating wives, "Feeling miserable" was found to be the most important of the Marital Prediction Test (MPT) variables. Discriminant analyses of MPT variables indicated that husbands' marital satisfaction is more strongly influenced by earlier relationships than is wives' satisfaction. Behaviours occurring within a distressed marriage, however, seem to be more readily translated by wives than by husbands into subjective feelings. Distressed husbands reported a significantly higher mean Proportion Spouse-Related Activities than did wives. Women in distressed relationships appeared to spend more time with others, perhaps establishing a support system for themselves.

When an item analysis of the ACQ was performed, it was found that the same kinds of problems were reported by both nondistressed and distressed couples. It appears highly probable that major or minor deficits in such behaviours as the appropriate expression of feelings, showing appreciation, and providing attention are learned in the family of origin and taken into the marital relationship. Inadequate interpersonal skills seem likely to be related more to distressed family relationships in general than to marital distress per se, particularly for men. The evidence suggests that both real behaviour deficits and culture-bound sex differences are implicated in marital distress, with women reacting with more subjective discomfort to marital distress than do men.

Investigation of sex differences within the behavioural model points to the weakness of the model itself. A behavioural theory of marital distress that takes no account of prior learning within family relationships would appear to be simplistic and to require some reformulation.

THE TREATMENT OF MARITAL DISTRESS

A review of the literature found strong evidence that behavioural marital therapy is effective in treating marital distress, but only suggestive evidence that it is more effective than other types of marital therapy. Several criticisms of behavioural marital therapy research were made. The focus of previous studies has been on producing initial treatment gains, while follow-up has been largely inadequate. With few exceptions, outcome data has been pooled and process data not reported. Furthermore, changes in individual variables have been virtually ignored. Thus, little can be said about the type of marital problem best responding to behavioural therapy, or about the issue of deterioration following therapy.

In Study 2, analysis of pooled self-report and quasi-observational data by means of a multiple analysis of variance produced a strong treatment effect ($p \leq .001$) consistent with earlier findings (Jacobson, 1979; Liberman et al., 1976; Margolin & Weiss, 1978a; Weiss et al., 1973). Significant improvements were found on MAT and ACQ scores and on the Displease Rate following treatment. Gains in the Proportion Spouse-Related Activities and in the Total Symptom score following marital therapy had not previously been reported, although the desirability of using a measure of individual physical wellbeing to evaluate treatment effects has been pointed out by O'Leary and Turkewitz (1978b).

A similar analysis of pooled laboratory observational data also produced a strong treatment effect ($p<.001$). Of the five MICS variables which entered into multivariate analysis of variance, three significant univariate contrasts were found: Positive Nonverbal, Negative Verbal, and Negative Nonverbal. Whereas most investigators have collapsed the MICS into two categories, Liberman et al. (1976) used the same five categories, plus Problem Description, and reported significant gains in the same three categories. Results of the present study provide further supporting evidence for the effectiveness of behavioural marital therapy in producing immediate gains in those variables relevant to the behavioural model. In addition, treatment was shown to produce gains in the individual variable Total Symptoms, as evaluated by the Symptom Checklist (SCL).

Over time it was found that some gains were more durable than others. The mean Please Rate was found to be the least durable, while the mean Total Symptom score was one of the most durable gains. The ACQ was found to be clinically the most useful of the behavioural-based measures. Maintenance of treatment gains was strongly related to an initial reduction to within nondistressed limits of the ACQ score. Although behavioural treatment has generally emphasized the need to increase the exchange of pleasing behaviours, a growing body of evidence, as discussed above, suggests that the negative aspects of a relationship are more importance in determining the level of marital satisfaction than are the positive aspects. This being so, therapy may well be most effective when the emphasis is on the reduction of negative behaviours.

Results of the intensive study of single cases indicate that treatment efficacy was related to the degree of pre-existing personality disturbance. The greater the personality disturbance, the greater the probability that the client would attend to overlearned internal stimuli, such as feelings of anxiety and negative self-statements, at the expense of new external stimuli. Success or failure also appeared to be related to prior learning regarding the appropriateness of expression of feelings, to the availability of alternatives as predicted by social exchange theory, and to the diligence with which new skills were practised.

As in Study 1, it was found that certain developmental factors and culture-bound variables were related to marital distress. It would seem that marital distress does not begin with marriage as the current behavioural model implies (Birchler et al., 1975), but has its roots in prior learning. The frequent involvement of anxiety in relationship difficulties suggests that some roots go back to genetic differences in the reactivity of the autonomic nervous system. This view implies that some interpersonal difficulties represent a "trait" phenomenon. In concluding that distressed communication was a "state" rather than "trait" phenomenon, Birchler et al., (1975) compared communication within a close relationship to communication between strangers. A further appropriate investigation would have been one in which husband-wife interaction was compared with other family interaction, between partners and their respective parents, for example.

An analysis of process data suggested that the issue of deterioration was a non-issue. Whereas, following therapy, a couple may have separated, the result cannot be viewed in terms of relationship deterioration alone.

The relationship may have been so destructive for all or most family members that the most positive outcome is that one of the partners be helped to find an alternative to staying in the marriage.

The discrepancy repeatedly found in the above studies between husband and wife MAT scores appears to be an enduring feature of marital distress. It is not surprising, therefore, to find that the effect of marital distress on health is more pronounced in wives than in husbands. The further findings that, for husbands and wives collectively, the correlation between Total Symptoms and MAT scores was $r = -.56$ ($p < .005$), and that marital therapy was shown to significantly reduce the mean Total Symptom score could have important applications for future family health care.

THE PREVENTION OF MARITAL DISTRESS

To date only two behavioural studies have been concerned more with prevention than with treatment of marital distress (Margolin and Louscher, 1978; Margolin and Weiss, 1978b), and these, like most of the studies reported by communication skills researchers have reported no follow-up data. While it is not possible to compare the results of Study 3 with earlier findings, several significant treatment effects were found. Analysis of pooled self-report and quasi-observational data by means of multiple analysis of covariance produced a significant pre- to posttraining effect ($p < .01$), while a comparison of Experimental and Control groups on repeated measures produced a significant long-term training effect ($p < .001$). No such effects were found when scores on MICS variables were investigated.

The trained group outperformed the untrained group on mean Please Rate, Displease Rate, Proportion Pleases, MAT and ACQ scores.

As with the distressed couples in Study 2, the Please Rate appeared to be the least durable of the gains. While, when working with distressed couples, the therapeutic effectiveness of focusing on increasing the exchange of *Pleases* is questionable, such an emphasis appears to be justified in terms of prevention. Although the mean Please Rate did not continue at the immediate posttraining level, it did remain well above baseline throughout the 12-month follow-up period. One of the problems reported by both distressed and nondistressed couples in the first study was one of not receiving sufficient appreciation. Training sensitizes couples to this important human need, and results suggest that this sensitization is more effective as a prevention strategy.

The mean Proportion Spouse-Related Activity and mean scores on MICS variables were unresponsive to training. It is probable that the unresponsiveness of the former measure can be accounted for by ceiling effects. The unresponsiveness of MICS variables is more difficult to explain. In asking couples to discuss a topic about which they had to reach a decision, the wrong interational stimulus may have been chosen. Decision-making issues seemed to encourage excessive use of the neutral Problem Description category.

Another explanation is that the MICS is not sufficiently sensitive to pick up the type of changes that might have occurred. Studies by Wieder and Weiss (1980) and Cohen and Christensen (1980) suggest that communication patterns between partners are consistent. In Study 2, major reductions in negative behaviour following marital therapy were easy to discriminate because a predominantly negative style had been the consistent pattern of the Distressed group.

A return to the laboratory would probably be a stimulus for adoption of newly learned skills even if they were not being used regularly at home. For example, Negative Verbal scores decreased from 3.0 and 2.4 per minute for wives and husbands, respectively, prior to treatment, to 0.49 and 0.17 posttreatment. There were no such major changes in the communication style of newlymarried couples. Major changes would have been in the area of expression of feeling, reflection, empathizing, pinpointing, and compromising. Four of these skills would most probably be coded as Problem Description by the MICS, and the fifth, Compromise, is so narrowly defined as to appear with very low frequency.

The predominant style of the untrained newlymarried couples was positive, and tended to be unchanged over time. Initially, Negative Verbal scores were 0.51 and 0.30 per minute for Experimental group wives and husbands, and 0.10 and 0.04 for Control group wives and husbands, respectively. This compares with scores of 0.11 and 0.13 for Nondistressed group wives and husbands, and 3.09 and 2.40 for Distressed group wives and husbands, respectively, in Study 1. Positive communication variables were found to be very similar for both the Nondistressed and Newlymarried groups (see Appendices I and II). For the most part, contentious issues were not brought into the laboratory for discussion. They were, however, discussed during training, and differences between the two groups of newlymarried couples were very evident at that time. Perhaps a more useful group comparison would have involved the analysis of couple interaction during training sessions.

Despite nonsignificant differences in scores on MICS variables, the training clearly had an immediate effect on couples, and an even stronger effect over time. In working with newlymarried couples, impressions that had been formed with distressed couples were reinforced. Marital distress cannot be thought of as a spontaneous happening within a new relationship. Dysfunctional patterns are predictable given sufficient knowledge of each partner's prior learning. Self-esteem and level of anxiety are powerful factors in the development of marital distress but have not previously been incorporated into the behavioural model. The most difficult couples to work with in both the treatment and prevention studies were those partnerships where both partners had poor self-esteem. Among the newlymarried couples the most common behaviour deficits were found to be in the areas of expressing feelings and dealing constructively with perceived criticism. One of the most surprising findings of the prevention study was the high incidence of anxiety in a nonclinical population, and the relationship of anxiety to marital interaction. Another unexpected finding was the limited support found for the classical behavioural model of marital distress. When distressed couples were compared with nondistressed couples, the model was clearly supported. When process data from distressed couples, and particularly from newlymarried couples, were investigated, however, it became evident that the model oversimplifies the development of marital distress.

In reviewing the literature, the author found that, with the exception of Stuart (1980), theorists have not attempted to adequately incorporate communication and cognitive concepts into behaviour theory. Results of Studies 2 and 3 suggest that there is a need to incorporate internal stimuli such as level of anxiety and negative self-statements

into a behavioural theory of marriage, as well as to fully integrate communication concepts.

THE BEHAVIOURAL MODEL OF MARITAL DISTRESS REVISED

While the behaviour exchange model of marital therapy has been concerned primarily with the modification of stimulus and reinforcement control, scant explicit attention has been given to the modification of internal stimuli. The emphasis has been on overt behaviours. Figure 6.1 adapts the reciprocal determinism model of behaviour (Bandura, 1978) to describe the relationship between overt behaviours and internal stimuli for each of two partners within the marital dyad. In this section an attempt is made to reformulate the behavioural model of marriage to take these additional factors into account.

The Contribution of Dysfunctional Internal Stimuli to Marital Distress

Anxiety is a powerful emotion which may have been overlearned prior to marriage. Within marriage it may quickly generalize to many spouse behaviours. Much of the interaction between partners may thus become mediated by an emotion which can act as an extremely strong negative reinforcer for the partner suffering anxiety. The overt behaviour which results from the anxiety response may be a highly aversive discriminative stimulus for the non-anxious partner. For example, one spouse (Spouse A) may have learned in childhood that the expression of feelings is associated with anxiety. Following marriage, the anxiety may generalize to requests by the new partner (Spouse B) that Spouse A express feelings.

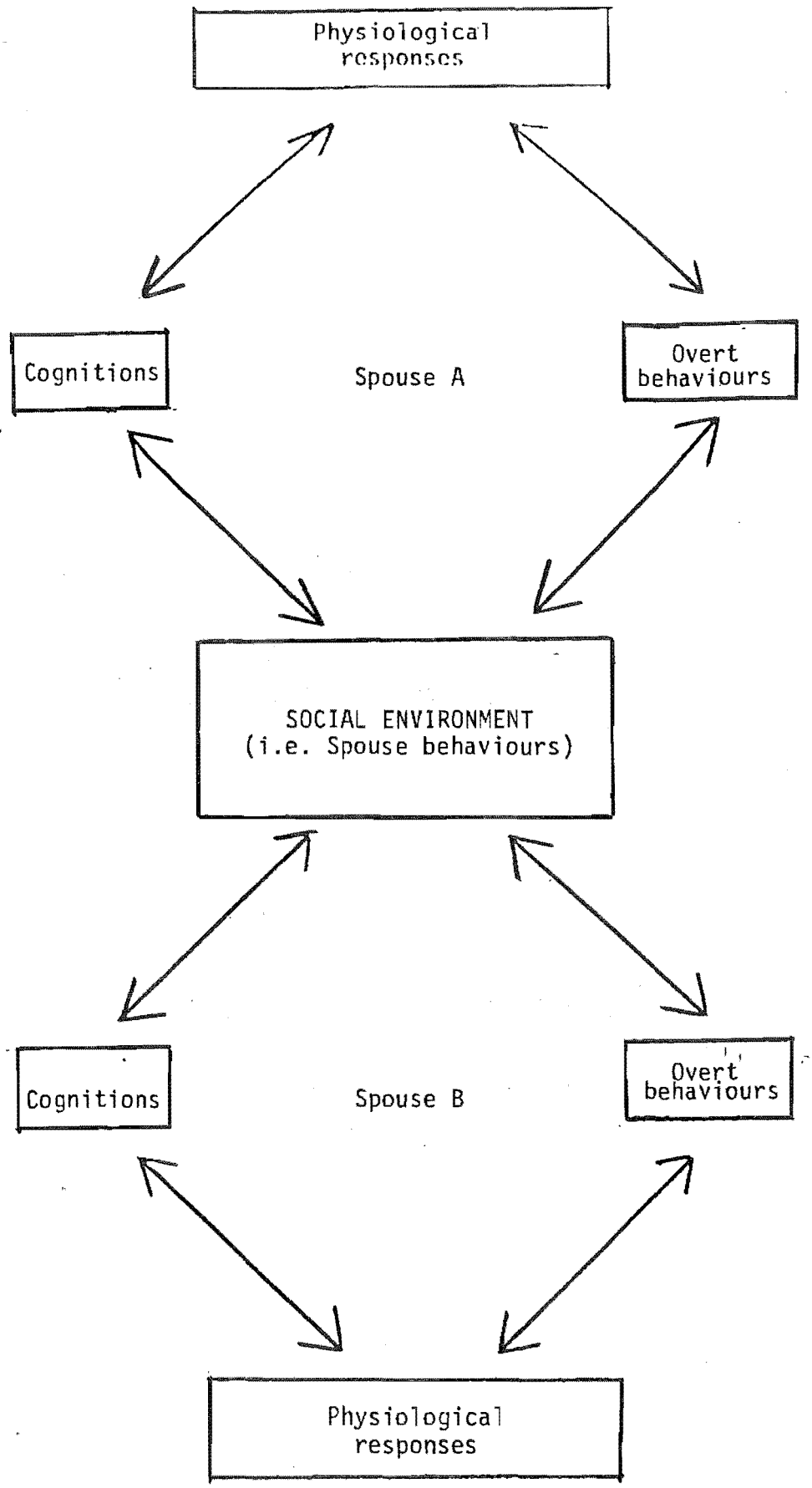


Figure 6.1

The reciprocal determinism model of behaviour applied to the marital dyad.

The refusal of Spouse A to do so may, over time, become a discriminative stimulus for Spouse B to behave coercively, or to withdraw. When treating a highly anxious spouse it may be appropriate to treat the anxiety directly, as an adjunct to couple therapy. If one concentrates only on changing overt behaviours, it is possible that the anxiety response of Spouse A will generalize to those new behaviours which Spouse B has adopted under the direction of the therapist.

During childhood, many individuals learn to internalize negative self-statements and may develop highly irrational belief systems. All incoming stimuli must be filtered though this belief system and may, in consequence, become grossly distorted. If such issues are not dealt with at a cognitive level, it is possible that new behaviours will be misinterpreted and punished rather than reinforced by the negative-thinking partner. The therapist must consider the appropriateness of modifying spouse A's cognitions about Spouse B's behaviour (modified cognitive control for Spouse A), of modifying Spouse B's behaviour (modified stimulus or reinforcement control for Spouse A), or modifying both. It would be inappropriate, for example, to modify the behaviour of one spouse in order to satisfy the needs of a compulsive partner. Furthermore, the therapist should actively seek to modify the expectations of the least maladjusted spouse regarding the partner's responses, since it is the least maladjusted spouse who can best be taught to tolerate a low schedule of reinforcement. In general, the therapeutic plan must be to modify cognitions and physiological responses in order to make new behaviours possible. New behaviours can be expected to lead to new, desired consequences which further modify cognitions such that the new behaviour is more likely to be repeated.

Incorporating Communication Concepts Into the Behavioural Model

Because "communication" and "behaviour" are not explicitly viewed as synonymous by behavioural theorists, the relevance of communication skills has not been made clear. The author proposes that dyadic interaction can more usefully be conceptualized in terms of verbal and nonverbal messages, rather than in terms of communication and behaviour. A "message" is any verbal or nonverbal behaviour in which one spouse engages, and which is interpreted by the partner as having relevance to the relationship. A verbal "message" involves the spoken word, while a nonverbal "message" may be a frown, a yawn, a half-eaten meal, a slammed door, or a spouse going out alone.

Verbal and nonverbal messages constitute the basis of behaviour exchange, operating as discriminative stimuli, reinforcers, and punishments. Any change in these messages necessarily alters stimulus, reinforcement, and cognitive control. While all schools of marital therapy share a commitment to the improvement of "communication", there are major differences in the theoretical tenets upon which a particular communication skill is used.

From the perspective of a communications theorist, "reflection of feeling" is one "skill" believed to increase the probability that the partner will send self-disclosing messages. "Self-disclosure" is a "skill" thought to be positively related to psychological and physical wellbeing (Zarle and Boyd, 1977). Building on the work of Rogers (1951), other theorists (Carkhuff, 1971; Guerney, 1964) have extended Roger's "necessary and sufficient conditions of therapeutic personality change" to dyadic interaction. Such "skills" training is, therefore, well grounded in theory.

Alternatively, from a behavioural perspective, the use of "reflection of feeling" can be described initially as a discriminative stimulus for further expression of feeling. If self-disclosing messages do, in fact, increase, "reflection of feelings" messages can be described as positive reinforcers for "self-disclosure". Self-disclosing messages are important to the relationship because when thoughts and feelings of partners are not made explicit, each may make highly erroneous assumptions about the thoughts and feelings of the other based on past learning, and mistakenly behave as if the assumptions were true. Thus communication "skills" are not merely "tools" for improving a relationship. Verbal and nonverbal messages represent the process of the relationship, and "communication skills" training represents an attempt to modify that process by changing the messages. In changing messages, discriminative stimuli, reinforcers, cognitions and physiological responses may all be changed. With some couples, however, there may be a need to focus on individual cognitions and physiological responses as an adjunct to modifying messages.

TOWARD A GENERAL THEORY OF INTERPERSONAL RELATIONSHIPS

Marital therapists have traditionally operated from one of two views of marital distress. Distress has been seen as stemming from an individual personality problem, or from an interactional dysfunction. Treatment has, therefore, focused on either the individual or on the marital dyad (Miller, Carrales and Wackman, 1975). The findings of the above studies suggest that treatment may have to be directed at both the individual and the interaction. While some marital difficulties arise within the dayd, others are taken into the relationship by individual partners by way of personality problems or interpersonal skills deficits.

Such individual difficulties may then be subject to reinforcement within the dyad and become established as a feature of the marital system. The most powerful discriminating variable of distressed and nondistressed couples was found, in Study 1, to be the level of conflict. As proposed by the behavioural model, and as supported by the above study, the inability to satisfactorily resolve conflict is a significant feature of the distressed marriage. As such there is a high probability that this particular behaviour deficit is also a feature of the distressed couple's family system.

It is within the family of origin that children learn interpersonal skills. Behaviour deficits such as the inability to resolve conflict may lead to problems at an early age. Kifer, Lewis, Green and Phillips (1974) described a group of juvenile delinquents as relating to parents by resorting to abusive criticism while failing to express their own feelings. Such interaction is also typical of marital distress. Parents may become frustrated in their attempts to manage their adolescent's deviance from the family norms and adopt coercive methods of control (Everett, 1976). Thus, parent-child conflict can be fitted into the model describing marital conflict. Similarly, as marital interaction can be significantly improved by training, so, too, can family interaction. Kifer et al. (1974) described their successful family intervention as educational rather than therapeutic. Their goal was to enable clients to resolve their own conflicts without further outside intervention. Arnold et al. (1975) described an intervention that was aimed primarily at the referred child. They found that changes occurred within the entire family system as parents learned a general set of child management skills.

Process data from trained distressed and newlymarried couples suggested that many of their new skills generalized to interaction with friends, workmates and children.

Without training, interpersonal difficulties learned during childhood may represent a life long problem for some individuals. As was shown in Chapter IV, interpersonal difficulties are related to physical and emotional wellbeing, and so have important implications for health care. A basic understanding of the interaction between illness and factors that influence behaviour deserves careful consideration. If prevention is to be an achievable goal, efforts must be undertaken to modify precipitating behaviours (Katz and Zlutnick, 1975). Interpersonal behaviours are often implicated as precipitating behaviours. It is highly probable that physical and emotional problems such as asthma, colitis, anxiety, depression and substance abuse are shaped up during childhood, and continue to be reinforced within marriage. In treating female agoraphobics, Hafner (1980) described a spouse-aided therapy designed to enable the patient's spouse to acknowledge and relinquish his contribution to the patient's continuing disability.

Training differs from therapy in that training is primarily concerned with the improvement of interpersonal relationships. Those having been trained should know in what circumstances it is appropriate to use what strategy and to what effect. In contrast, a client may leave therapy saying of the therapist, "I don't know what he did, but I feel better". Behavioural training has been used to improve interpersonal relationships between parent and child, and between husband and wife. The training mode is, in fact, used to best effect when the presenting problems have a major interpersonal behaviour component and can be effective in changing that behaviour over a short

period of time (Valle and Marinelli, 1975). Carkhuff (1971) described the training of significant others as a natural extension of the behaviour modification approach. In citing training programmes in interpersonal skills conducted to facilitate relations between races and generations, and to prepare black children to deal effectively with the provocation and abuse associated with entry into desegregated schools, he argued that the problems of society-at-large may be treated by training.

Behaviourists have, however, been slow to develop a more general theory of interpersonal relationships. While a review of the literature indicated that behavioural marital therapy grew out of studies involving child management, interventions within the family have continued to develop along these two different lines, and little interest has been shown in the development of a behavioural model of family distress. However, as the marital dyad fits the model shown in Figure 6.1 so, too, does the parent-child dyad fit the same model. In fact, any 2-person interaction fits the model, but family relationships represent special interactions in that interpersonal behaviours can be repeated on numerous occasions over time. As a consequence, both functional and dysfunctional physiological responses and cognitions, as well as functional and dysfunctional behaviours may be shaped up. Within the field of child management it is easy to focus on overt behaviour changes at the expense of covert behaviour changes. In treating temper tantrums by use of time-out, for example, one usually sees rapid overt behaviour changes, and the child probably does not have the necessary ability to identify, and vocabulary to discuss, any associated covert behaviour changes.

The proposed model would explain the temper tantrum in terms of the child's overt response to the internal stimulus of arousal, and the disappearance of the problem behaviour in terms of the child's gaining cognitive control over his/her own arousal level as well as over his/her behaviour. Whether covert and overt behaviours are shaped up within the family of origin or within the marital dyad, the learning process is the same, and is consistent with social learning theory. The revised behavioural model of marriage can usefully be extended to a behavioural model of family relationships. The environment of each family member then comprises the behaviours of all other family members. And each individual is in a position of having to choose to which behaviour of which family member he/she will respond, and with what response. Even within the same family, each individual responds to different external and internal stimuli.

Unlike behavioural theorists, sociologists have shown interest in developing a more general theory of interpersonal relationships. Levinger (1965) suggested that marriage research can fruitfully be linked to small group research, and that knowledge of the "attractions" and "repulsions" within a marital relationship could be integrated with knowledge of social relationships in general. Nye (1978) proposed a theory of Choice and Exchange. The essential features of his theory are that rewards and costs can and do accrue from sources other than interpersonal interaction, and that many costs and rewards are better conceptualized as Choice rather than Exchange.

While social exchange theory has been shown to predict "elementary" social behaviour, Nye argues, that by incorporating the concepts of Choice and Exchange into one theoretical system, the system could be developed into a general theory capable of addressing

itself to the behaviour of individuals, families and even to the macro level of social movements.

SOCIAL APPLICATIONS

While Nye argues that there is an urgent need for a general theory to guide social research, the present author sees a theoretical understanding of the family as being sufficiently useful to suggest strategies which, if implemented, could ameliorate many of the social problems discussed in Chapter I. It is the repetition of dysfunctional interaction which shapes up individual behavioural, emotional and many physical problems over time. More than any other social group, families have unlimited opportunity to practise dysfunctional interaction. Family interaction, therefore, should be the focus of strategies for constructive change. Behavioural theory provides concrete principles for changing behaviour. Psychology has the basic concepts, understanding of problems, and scientific method. What seems to be overdue is the translation of this information into solutions of social problems (Azrin, 1977). Behaviour theory is distinctive in its systematic methodology and its ability to demonstrate tangible evidence of human behaviour change. Behavioural interventions are simple, require no understanding of complex psychodynamics, can be used for training significant others and other nonprofessionals, and, as was shown in Study 3, are ideally suited for prevention training.

Prevention is an attractive alternative to treatment. In the first study, both happy and unhappy couples reported having the same kinds of problems, but to different degrees. Behaviour deficits common to both groups included the inability to express emotion, and to provide sufficient appreciation. These behaviours were seen in Studies 2 and 3 to improve using modelling and behaviour rehearsal.

New learning was, however, seen to be made easier when it took place in a more supportive environment such as the happy couples' group as described in Study 3. By contrast, the environment in which treatment of marital distress was conducted (Study 2) was much less supportive, and both the teaching and the acquisition of new learning was seen to be more difficult. Because these and other behaviour deficits have often been learned in childhood, prevention should ideally begin there. The widespread availability of parent training, and social education in schools could alleviate many of these individual problems before they contribute to marital problems.

Level of anxiety is probably inherited as a genetic predisposition. Some individuals probably react with more subjective discomfort than do others to changes in autonomic nervous system activity, and develop more dysfunctional escape and avoidance behaviours. Without their being fully aware of what is happening to them, the quality of all social relationships of those individuals employing escape and avoidance strategies to excess can be adversely affected. Parent and teacher training in the early identification of such potential problems followed by family counselling and assertion training for the child could contribute significantly to the reduction of the number of individuals suffering high levels of anxiety, and associated physical symptoms. While the disruptive child is often identified as a behaviour problem, the withdrawn child is easy to ignore.

A significant amount of human distress can be avoided or ameliorated by training in relationship skills, and prevention is preferable to treatment. Training in interpersonal skills should focus on the home and in schools. Both represent environments in which interactions are repetitive and child behaviour is shaped.

In New Zealand there are several obvious and convenient points of intervention for such training. These include: pre-marital counselling, social education in schools, teacher training, parent education for those wishing to adopt, to foster children or to work in children's institutions such as Social Welfare and Detention Homes, and for those receiving child-related Social Welfare benefits. Social education could conveniently be incorporated into the training of prison and probation officers, and be made available to prison inmates by way of parent training and relationship enchancement.

To date, the political emphasis has been on the modification of the technological and economic environment as a means of maximizing the total wellbeing of individuals in the social environment. To suggest that we should intervene as directly in the social environment as we do in the economic environment is a radical departure, and one that politicians may not be ready for. Feldman (1979) questions the ability of policymakers to transcend their time or to accept information that is more complex than they are ready for.

Interference with family relationships may be seen initially as an unacceptable intrusion of privacy, but fertility is no guarantee of quality parenting. Laws (1971) asks why, if we value this responsibility so highly, have we not established standards for its optimum discharge. Ideally, because the scientific community has the knowledge to promote such a goal, every New Zealand child would grow to be a well-adjusted individual. Clearly, that is what most parents wish for their own child. Whether such an ideal state could ever be attained is debatable, but, to whatever degree such a goal is attained, it will be tough-minded science and not wishful thinking, blind faith, magic or dogma that will contribute most constructively to its attainment. A dispassionate scientific approach is, in the last analysis, also the most humanistic one (Wertheimer, 1978).

REFERENCES

ALBERTI, R.E., & EMMONS, M.L. Assertion training in marital counseling. *Journal of Marriage and Family Counseling,* 1976, 2, 49-54.

ALKIRE, A.A., & BRUNSE, A.J. Impact and possible causality from videotape feedback in marital therapy. *Journal of Consulting and Clinical Psychology,* 1974, 42, 203-210.

ARNOLD, J.E.,LEVINE, A.G., & PATTERSON G.R. Changes in sibling behavior following family intervention. *Journal Consulting and Clinical Psychology,* 1975, 43, 683-688.

AZRIN, N.H. A strategy for applied research: Learning based but outcome oriented. *American Psychologist,* 1977, 32, 140-149.

AZRIN, N.H., NASTER, B.J.,& JONES, R. Reciprocity counseling: A rapid learning - based procedure for marital counseling. *Behavior Research & Therapy,* 1973, 73, 365-82.

BACH, G.,& WYDEN, P. *The Intimate Enemy.* New York Morrow & Co., 1968.

BANDURA, A. *Social Learning Theory.* Englewood Cliffs, New Jersey: Prentice-Hall, 1977a.

BANDURA, A. Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review,* 1977b, 84, 191-215.

BANDURA, A. The self system in reciprocal determinism. *American Psychologist,* 1978, 33, 344-358.

BARLOW, D.H. On the relation of clinical research to clinical practice: Current issues, new directions. *Journal of Consulting and Clinical Psychology,* 1981, 49, 147-155.

BARLOW, D.H.,& HERSEN, M. Single-case experimental designs. *Archives of General Psychiatry,* 1973, 29, 319-325.

BARNETT, L.R., & NIETZEL, M.T. Relationship of instrumental and affectional behaviors and self-esteem to marital satisfaction in distressed and nondistressed couples. *Journal of Consulting and Clinical Psychology,* 1979, 47, 946-957.

BARRY, W.A. Marriage research and conflict: An integrated review. *Psychological Bulletin,* 1970, 73, 41-54.

BECK, D.F. Research findings on the outcomes of marital counseling. In D.H.L. Olson (Ed.), *Treating Relationships.* Lake Mills, Iowa: Graphic Publishing Co., Inc., 1976.

BECK, A.T., WARD, C.H., MENDELSON, M., MOCK, J., & ERBAUGH, J. An inventory for measuring depression. *Archives of General Psychiatry,* 1961, 4, 561-571.

BERKOWITZ, B.P., & GRAZIANO, A.M. Training parents as behavior therapists: A review. *Behavior Research and Therapy,* 1972, 10, 297-317.

BIENVENU, M. Measurement of marital communication. *The Family Coordinator,* 1970, 19, 26-31.

BIRCHLER, G.R. The Inventory of Rewarding Activities. Unpublished manuscript. University of Oregon, 1975.

BIRCHLER, G.R. Communication skills in married couples. In A.S. Bellack & M. Hersen (Eds.), *Research and Practice in social skills training.* New York: Plenum Press, 1979.

BIRCHLER, G.R. & WEBB, L.J. Discriminating interaction behaviors in happy and unhappy marriages. *Journal of Consulting and Clinical Psychology,* 1977, 45, 494-495.

BIRCHLER, G.R., WEISS, R.L., & VINCENT, J.P. Multimethod analysis of social reinforcement exchange between maritally distressed and nondistressed spouse and stranger dyads. *Journal of Personality and Social Psychology,* 1975, 31, 349-360.

BIRNBRAUER, J.S., PETERSON, C.R., & SOLNICK, J.V. Design and interpretation of studies of single subjects. *American Journal of Mental Deficiency,* 1974, 19, 191-203.

BLOOM, B.L., WHITE, S.W., & ASHER, S.J. Marital disruption as a stressful life event. In G. Levinger, & O.C. Moles (Eds.), *Divorce and separation: Context, causes and consequences.* New York: Basic Books, Inc., 1979.

BOELENS, W., EMMELKAMP, P., MacGILLAVRY, D., & MARKVOORT, M. A clinical evaluation of marital treatment: Reciprocity counseling versus system-theoretical counseling. *Behaviour Analysis and Modification,* 1980, 4, 85-96.

BORNSTEIN, P.H., BACH, P.J., HEIDER, J.F. & ERNST, J. Clinical treatment of marital dysfunction: A multiple-baseline analysis. *Behavioural Assessment,* 1981, 3, 335-343.

CARKHUFF, R.R. Training as a preferred mode of treatment. *Journal of Counseling Psychology,* 1971, 18, 123-131.

CARTER, R.D., & THOMAS, E.J. A case application of a signaling system (SAM) to the assessment and modification of selected problems of marital communication. *Behavior Therapy,* 1973, 4, 629-645.

CHRISTENSEN, A., & NIES, D.C. The Spouse Observation Checklist: Empirical analyses and critique. *American Journal of Family Therapy,* 1980, 8, 69-79.

COHEN, R.S., & CHRISTENSEN, A. Further examination of demand characteristics in marital interaction. *Journal of Consulting and Clinical Psychology,* 1980, 48, 121-123.

COLEMAN, R.E., & MILLER, A.G. The relationship between depression and marital maladjustment in a clinic population: A multitrait-multimethod study. *Journal of Consulting and Clinical Psychology,* 1975, 43, 647-651.

COLLINS, J.D. Experimental evaluation of a six-month Conjugal Therapy and Relationship Enhancement Program. In B.G. Guerney (Ed.), *Relationship enhancement.* San Francisco: Jossey-Bass, 1977.

CROWE, J.J. Conjoint marital therapy: A controlled outcome study. *Psychological Medicine,* 1978, 8, 623-636.

DE ROSIS, H.A. Parent group discussions: A preventive mental health technique. *The Family Coordinator,* 1970, 19, 329-334.

DOHRENWEND, B.S., & DOHRENWEND, B.P. (Eds.), *Stressful life events: Their nature and effects.* New York: Wiley, 1974.

EISLER, R.M., & HERSEN, M. Behavioral techniques in family-oriented crisis intervention. *Archives General Psychiatry,* 1973, 28, 111-116.

EISLER, R.M., HERSEN, M., & AGRAS, W.S. Effects of videotape and instructional feedback on nonverbal marital interaction: An analog study. *Behavior Therapy,* 1973, 4, 551-558.

ELLIS, A. *The art and science of love.* New York: Bantam Books, 1966.

ELY, A.L. Efficacy of training in conjugal therapy. *Dissertation Abstracts International,* 1970, 31(B), 4988.

ELY, A.L., GUERNEY, B.G., & STOVER, L. Efficacy of the training phase of conjugal therapy. *Psychotherapy: Theory, research and practice,* 1973, 10, 201-207.

EVERETT, C.A. Family assessment and intervention for early adolescent problems. *Journal of Marriage and Family Counseling,* 1976, 2, 155-165.

FELDMAN, H. Why we need a family policy. *Journal of Marriage and the Family,* 1979, 41, 453-456.

FENSTERHEIM, H., & BAER, J. *Don't say yes when you want to say no.* New York: Dell Publishing Co., 1975.

FERREIRA, A.J., & WINTER, W.D. Family interaction and decision-making. *Archives of General Psychiatry,* 1965, 13, 214-223.

FLOWERS, J.V. Behavioral analysis of group therapy and a model for behavioral group therapy. In D. Upper & S.M. Ross (Eds.), *Behavioral group therapy, 1979: An annual review.* Champaign, Illinois: Research Press Company, 1979.

FRANKS, C.M., & WILSON, G.T. *Annual review of behavioral therapy: Theory and practice, Vol. VI.* New York: Brunner/Mazel, 1978.

GINSBERG, B.G., & VOGELSONG, E. Premarital Relationship Improvement by Maximizing Empathy and Self-Disclosure: The PRIMES Program in B.G. Guerney (Ed.), *Relationship enhancement.* San Francisco: Jossey-Bass, 1977.

GOLDIAMOND, I. Self-control procedures in personal behavior problems. *Psychological Reports,* 1965, 17, 851-868.

GOLDSTEIN, M.K. Behavior rate change in marriages: Training wives to modify husbands' behavior. *Dissertation Abstracts International,* 1971, 32(B), 559.

GOLDSTEIN, M.K., & FRANCIS, B. Behaviour modification of husbands by wives. Paper presented at the National Council on Family Relations Annual Meeting, Washington, D.C., 1969.

GOODRICH, D.W., & BOOMER, D.A. Experimental assessment of modes of conflict resolution. *Family Process,* 1963, 2, 15-24.

GOTTMAN, J.M. N-of-one and N-of-two research in psychotherapy. *Psychological Bulletin,* 1973, 80, 93-105.

GOTTMAN, J.M. Consistency of nonverbal affect and affect reciprocity in marital interaction. *Journal of Consulting and Clinical Psychology,* 1980, 48, 711-717.

GOTTMAN, J., MARKMAN, H., & NOTARIUS, C. The topography of marital conflict: A sequential analysis of verbal and nonverbal behavior. *Journal of Marriage and the Family,* 1977, 39, 461-477.

GOTTMAN, J., NOTARIUS, C., GONSO, J., & MARKMAN, H. *A couple's guide to communication.* Champaign, Illinois: Research Press, 1976.

GOTTMAN, J., NOTARIUS, C., MARKMAN, H., BANK, S., YOPPI, B., & RUBIN, M.E. Behavior exchange theory and marital decision making. *Journal of Personality and Social Psychology,* 1976, 34, 14-23.

GRANT, I., SWEETWOOD, H.L., YAGER, J., & GERST, M.S. Patterns in the relationship of life events and psychiatric symptoms over time. *Journal of Psychosomatic Research,* 1978, 22, 183-191.

GREER, S.E., & D'ZURILLA, T.J. Behavioral approaches to marital discord and conflict. *Journal of Marriage and Family Counseling,* 1975, 2, 299-315.

GUERNEY, B. Filial therapy: Description and rationale. *Journal of Consulting Psychology,* 1964, 28, 304-310.

GUERNEY, B.G. *Relationship enhancement.* San Francisco: Jossey-Bass, Inc., 1977.

GUERNEY, B., STOLLAK, G., & GUERNEY, L. The practicing psychologist as educator - An alternative to the medical practitioner model. *Professional Psychology,* 1971, 2, 276-282.

GURMAN, A.S. The effects and effectiveness of marital therapy: A review of outcome research. *Family Process,* 1973, 12, 145-170.

GURMAN, A.S., & KNISKERN, D.P. Enriching research on marital enrichment programs. *Journal of Marriage and Family Counseling,* 1977, 3, 3-11.

GURMAN, A.S., & KNISKERN, D.P. Behavioral marriage therapy: Empirical perspective. *Family Process*, 1978a, 17, 139-148.

GURMAN, A.S., & KNISKERN, D.P. Deterioration in marital and family therapy: Empirical, clinical and conceptual issues. *Family Process*, 1978b, 17, 3-19.

GURMAN, A.S., & KNUDSON, R.M. Behavioral marriage therapy: A psychodynamic - systems analysis and critique. *Family Process*, 1978, 17, 119-137.

GURMAN, A.S., KNUDSON, R.M., & KNISKERN, D.P. Behavioral marriage therapy: Take two aspirin and call us in the morning. *Family Process*, 1978, 17, 165-180.

HAFNER, R.J. Marital homeostatis and Spouse-Aided Therapy in persisting psychological disorders. *Australian Journal of Family Therapy*, 1980, 2, 2-8.

HARRELL, J., & GUERNEY, B.G. Training married couples in conflict negotiation skills. In D.H.L. Olson (Ed.), *Treating relationships*. Lake Mills Iowa: Graphic Publishing Co., Inc., 1976.

HAWKINS, J. Association between companionship, hostility, and marital satisfaction. *Journal of Marriage and the Family*, 1967, 30, 647-650.

HAYE, L., BLAMPIED, N.M., CHURCH, R.J., & PRIEST, H.F. Family relationships over three generations: A comparative study of distressed and nondistressed parent-teenager triads. *New Zealand Journal of Educational Studies*, 1981, 16, 81-87.

HAYES, S.C. Single case experimental design and empirical clinical practice. *Journal of Consulting and Clinical Psychology*, 1981, 49, 193-211.

HETHERINGTON, E.M. Divorce: A child's perspective. *American Psychologist*, 1979, 34, 851-858.

HICKOK, J.E., & KOMECHAK, M.G. Behavior modification in marital conflict: A case report. *Family Process*, 1974, 13, 111-118.

HICKS, M., & PLATT, M. Marital happiness and stability: A review of the research in the sixties. *Journal of Marriage and the Family*, 1970, 32, 553-574.

HINES, G.A. Efficacy of communication skills training with married partners where no marital counseling has been sought. *Dissertation Abstracts International*, 1976, 36(A), 5054-5046.

HINKLE, J.E., & MOORE, M. A Student Couples Program. *The Family Coordinator*, 1971, 20, 153-158.

HOLMES, T.H., & MASUDA, M. Life change and illness susceptibility. In B.S. Dohrenwend & B.P. Dohrenwend (Eds.), *Stressful life events: Their nature and effects*. New York: Wiley, 1974.

HOLMES, T.H., & RAHE, R.H. The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*, 1967, 11, 213-218.

JACKSON, D.D. The question of family homeostasis. *Psychiatric Quarterly Supplement*, 1957, 31, 79-90.

JACKSON, D.D. Family rules. *Archives of General Psychiatry*, 1965a, 12, 589-594.

JACKSON, D.D. The study of the family. *Family Process*, 1965b, 4, 1-20.

JACOBSON, N.S. Problem solving and contingency contracting in the treatment of marital discord. *Journal of Consulting and Clinical Psychology*, 1977, 45, 92-100.

JACOBSON, N.S. Specific and nonspecific factors in the effectiveness of a behavioral approach to the treatment of marital discord. *Journal of Consulting and Clinical Psychology*, 1978a, 46, 442-452.

JACOBSON, N.S. A review of the research on marital therapy. In T.J. Paolino & B.S. McCrady (Eds.), *Marriage and Marital Therapy*. New York: Brunner/Mazel, 1978b.

JACOBSON, N.S. A stimulus control model of change in behavioral couples' therapy: Inplication for contingency contracting. *Journal of Marriage and Family Counseling*, 1978c, 4, 29-35.

JACOBSON, N.S. Increasing positive behavior in severely distressed marital relationships: The effects of problem-solving training. *Behavior Therapy*, 1979, 10, 311-326.

JACOBSON, N.S., & MARTIN, B. Behavioral marriage therapy: Current status. *Psychological Bulletin*, 1976, 83, 540-556.

JACOBSON, N.S.,& MOORE, D. Spouses as observers of the events in their relationship. *Journal of Consulting and Clinical Psychology,* 1981, 49, 269-277.

JACOBSON, N.S., WALDRON, H.,& MOORE, D. Toward a behavioral profile of marital distress. *Journal of Consulting and Clinical Psychology,* 1980, 48, 696-703.

JACOBSON, N.S., & WEISS, R.L. Behavioral marriage therapy: The contents of Gurman et al. may be hazardous to our health. *Family Process,* 1978, 17, 149-163.

JOHNSON, S.M.,& LOBITZ, G.K. The personal and marital adjustment of parents as related to observed child deviance and parenting behaviors. *Journal of Abnormal Child Psychology,* 1974, 2, 192-207.

KAHN, M. Nonverbal communication and marital satisfaction. *Family Process,* 1970, 9, 449-456.

KOREN, P., CARLTON, K., & SHAW, D. Marital conflict: Relations among behaviors, outcomes, and distress. *Journal of Consulting and Clinical Psychology,* 1980, 48, 460-468.

KATZ, D. An automated system for eliciting and recording self-observations during dyadic communication. *Behavior Therapy,* 1974, 5, 689-697.

KATZ, R.C., & ZLUTNICK, S. *Behavior therapy and health care,* New York: Pergamon Press Inc., 1975.

KIESLER, D.J. Empirical clinical psychology: Myth or reality? *Journal of Consulting and Clinical Psychology,* 1981, 49, 212-215.

KIFER, R.E., LEWIS, M.A., GREEN, D.R., & PHILLIPS, E.L. Training predelinquent youths and their parents to negotiate conflict situations. *Journal of Applied Behavior Analysis,* 1974, 7, 357-364.

LAWS, J.L. A feminist review of marital adjustment literature: The rape of the Locke. *Journal of Marriage and the Family,* 1971, 33, 483-515.

LAZARUS, A. Behavior therapy and marriage counseling. *Journal of the American Society of Psychosomatic Dentistry and Medicine,* 1968, 15, 49-55.

LEDERER, W., & JACKSON, D. *Mirages of Marriage.* New York: W.W. Norton, 1968.

LEVINGER, G. Marital cohesiveness and dissolution: An integrative review. *Journal of Marriage and the Family,* 1965, 27, 19-28.

LIBERMAN, R. Behavioral approaches to family and couple therapy. *American Journal of Orthopsychiatry,* 1970, 40, 106-118.

LIBERMAN, R.P., LEVINE, J., WHEELER, E., SANDERS, N., & WALLACE, C.J. Marital therapy in groups: A comparative evaluation of behavioral and interactional formats. *Acta Psychiatrica Scandinavica,* 1976, Supplement 226, 3-34.

LIBERMAN, R.P., WHEELER, E.G., de VISSER, L.A., KUEHNEL, J., & KUEHNEL, T. *Marital therapy: A positive approach to helping troubled relationships.* New York: Plenum Press, 1980.

LINEHAN, K.S., & ROSENTHAL, T.L. Current behavioral approaches to marital and family therapy. *Advances in Behaviour Research and Therapy,* 1979, 2, 99-143.

LONGFELLOW, C. Divorce in context: Its impact on children. In G. Levinger and O.C. Moles (Eds.), *Divorce and separation: Content, causes, and consequences.* New York: Basic Books, Inc., 1979.

LUBER, R.F. Teaching models in marital therapy: A review and research issue. *Behavior Modification,* 1978, 2, 77-91.

MACE, D.R., & MACE, V. Marriage enrichment - A preventive group approach for couples. In D.H. Olson (Ed.), *Treating relationships.* Lake Mills, Iowa: Graphic Publishing Co., 1976.

MAGER, R.F. *Who did what to whom?* Film available from Research Press, Champaign, Illinois, 61820, 1972.

MARGOLIN, G. A sequential analysis of dyadic communication. Paper presented at the Association for the Advancement of Behavior Therapy, Atlanta, December, 1977.

MARGOLIN, G. Relationships among marital assessment procedures: A correlational study. *Journal of Consulting and Clinical Psychology,* 1978, 46, 1556-1558.

MARGOLIN, G. Behavior exchange in happy and unhappy marriages: A family cycle perspective. *Behavior Therapy*, 1981, 12, 329-343.

MARGOLIN, G., & LOUSCHER, K. Communication training for marital couples: A preventative approach. Paper presented at the Association for the Advancement of Behavior Therapy, Chicago, Nov., 1978.

MARGOLIN, G., & WEISS, R.L. A comparative evaluation of therapeutic components associated with behavioral marital treatments. *Journal of Consulting and Clinical Psychology*, 1978a, 46, 1476-1486.

MARGOLIN, G., & WEISS, R.L. Communication training and assessment: A case of behavioral marital enrichment. *Behavior Therapy*, 1978b, 9, 508-520.

MARKUSH, R.E., & FAVERO, R.V. Epidemiologic assessment of stressful life events, depressed mood, and psychophysiological symptoms - A preliminary report. In B.S. Dohrenwend, & B.P. Dohrenwend (Eds.), *Stressful life events*. New York: Wiley, 1974.

MARLETT, G.A., & GORDON, J.R. Determinants of relapse: Implications for the maintenance of behavior change. In P.O. Davidson & S.M. Davidson (Eds.), *Behavioral medicine: Changing health lifestyles*. New York: Brunner/Mazel, Inc., 1980.

McMULLIN, R., & Casey, B. *Talk sense to yourself*. Lakewood, Colorado: Counseling Research Institute, 1975.

MEAD, D.E. Reciprocity counseling: Practice and research. *Journal of Marital and Family Therapy*, 1981, 7, 189-200.

MEADOWS, M.E., & TAPLIN, J.F. Premarital counseling with college students: A promising triad. *Journal of Consulting Psychology*, 1970, 17, 516-518.

MILLER, S. The effects of communication training in small groups upon self-disclosure and openness in engaged couples' systems of interaction. *Dissertation Abstracts International*, 1970, 32(A), 2819.

MILLER, S., CORRALES, R., & WACKMAN, D.B. Recent progress in understanding and facilitating marital communication. *The Family Coordinator*, 1975, 24, 143-152.

MILLER, S., NUNNALLY, E.W., & WACKMAN, D. Minnesota Couples Communication Program (MCCP): Premarital & marital groups. In D.H.L. Olson (Ed.), *Treating Relationships*. Lake Mills, Iowa: Graphic Publishing Co., Inc., 1976.

MURPHY, D.C., & MENDELSON, L.A. Communication and adjustment in marriage: Investigating the relationship. *Family Process*, 1973a, 12, 317-326.

MURPHY, D.C., & MENDELSON, L.A. Use of the observational method in the study of live marital communication. *Journal of Marriage and the Family*, 1973b, 35, 256-263.

NAVRAN, L. Communication and adjustment in marriage. *Family Process*, 1967, 6, 173-184.

NELSON, R.O. Realistic dependent measures for clinical use. *Journal of Consulting and Clinical Psychology*, 1981, 49, 168-182.

NUNNALLY, E.W. Effects of communication training upon interaction awareness and empathetic accuracy of engaged couples: A field experiment. *Dissertation Abstracts International*, 1970, 32(A), 4736.

NYE, F.I. Is Choice and Exchange Theory the key? *Journal of Marriage and the Family*, 1978, 40, 219-233.

O'LEARY, K.D., & TURKEWITZ, H. Marital therapy from a behavioral perspective. In T.J. Paolino & B.S. McCrady (Eds.), *Marriage and Marital Therapy*. New York: Brunner/Mazel, 1978a.

O'LEARY, K.D., & TURKEWITZ, H. Methodological errors in marital and child treatment research. *Journal of Consulting and Clinical Psychology*, 1978b, 46, 747-758.

O'LEARY, K.D., & TURKEWITZ, H. A comparative outcome study of behavioral marital therapy and communication therapy. *Journal of Marital and Family Therapy*, 1981, 7, 159-169.

OLSON, D.H. Marital and family therapy: Integrative review and critique. *Journal of Marriage and the Family*, 1970, 32, 501-538.

OLSON, D.H. Review and critique of behavior modification research with couples and families. Paper presented at the annual meeting of the Association for the Advancement of Behavior Therapy, New York, Oct., 1972.

OLSON, D.H., RUSSELL, C.S., & SPRENKLE, D.H. Marital and family therapy: A decade review. *Journal of Marriage and the Family,* 1980, 42,973-993.

OLSON, D.H., & RYDER, R.G. Inventory of Marital Conflicts (IMC): An experimental interaction procedure. *Journal of Marriage and the Family,* 1970, 32, 443-448.

OLSON, D.H., & STRAUSS, M.A. A diagnostic tool for marital and family therapy: The SIMFAM technique. *The Family Coordinator,* 1972, 21, 251-258.

OLTMANNS, T.F., BRODERICK, J.E., & O'LEARY, K.D. Parents' marital adjustment and the efficacy of behavior therapy with children. *Journal of Consulting and Clinical Psychology,* 1977, 45, 724-729.

OTTO, H.A. Marriage and family enrichment programs in North America - Report and analysis. *The Family Coordinator,* 1975, 24, 137-142.

PATTERSON, G.R. *Families: Applications of social learning to family life.* Champaign, Illinois: Research Press, 1971.

PATTERSON, G.R. Parents and teachers as change agents: A social learning approach. In D.H.L. Olson (Ed.), *Treating relationahips.* Lake Mills, Iowa: Graphic Publishing Co., Inc. 1976a.

PATTERSON, G.R. Some procedures for assessing changes in marital interaction patterns. *ORI Research Bulletin,* 1976b, 16.

PATTERSON, G.R., COBB, J.A., & RAY, R.S. A social engineering technology for retraining the families of aggressive boys. In H.E. Adams & I.P. Unikel (Eds.), *Issues and trends in behavior therapy.* Springfield, Illinois: Charles C. Thomas, 1973.

PATTERSON, G.R., & GULLIAN, M.E. *Living with children: New methods for parents and teachers.* Champaign, Illinois: Research Press, 1968.

PATTERSON, G.R., & HOPS, H. Coercion, a game for two: Intervention techniques for marital conflict. In R.E. Ulrich & P. Mountjoy (Eds.), *The experimental analysis of social behavior.* N.Y.: Appleton-Century-Crofts, 1972.

PATTERSON, G.R., HOPS, H., & WEISS, R.L. Interpersonal skills training for couples in early stages of conflict. *Journal of Marriage and the Family,* 1975, 37, 295-303.

PATTERSON, G.R., McNEAL, S., HAWKINS, N., & PHELPS, R. Reprogramming the social environment. *Journal of Child Psychology and Psychiatry,* 1967, 8, 181-195.

PATTERSON, G.R., & REID, J.B. Reciprocity and coercion: Two facets of social systems. In C. Neuringer & J.L. Michael (Eds.), *Behavior Modification in Clinical Psychology.* New York: Appleton-Century-Crofts, 1970.

PAYKEL, E.S., PRUSOFF, B.A., & UHLENHUTH, E.H. Scaling of life events. *Archives of General Psychiatry,* 1971, 25, 340.

PETERSON, L., HARTMANN, D.P., & GELFAND, D.M. Prevention of child behaviour disorders: A lifestyle change for child psychologists. In P.O. Davidson & S.M. Davidson (Eds.), *Behavioural medicine: Changing health lifestyles.* New York: Brunner/Mazel Inc., 1980.

POWLES, J. On the limitations of modern medicine. *Science, Medicine, and Man,* 1973, 1, 1-30.

RAHE, R.H. The pathway between subjects' recent life changes and their near-future illness reports. B.S. Dohrenwend & B.P. Dohrenwend (Eds.), *Stressful life events.* New York: Wiley, 1974.

RAHE, R.H., MEYER, M., SMITH, M., KJAER, H., & HOLMES, T. Social stress and illness onset. *Journal of Psychosomatic Research,* 1964, 8, 35-44.

RAPPAPORT, A.F. Conjugal Relationship Enhancement Program. In D.H.L. Olson (Ed.), *Treating relationships,* Lake Mills, Iowa: Graphic Publishing Co., 1976.

RAPPAPORT, A.F., & HARRELL, J. A behavioral exchange model for marital counseling. *The Family Coordinator,* 1972, 21, 203-212.

RAUSH, M. Interaction sequences. *Journal of Personality and Social Psychology,* 1965, 2, 487-499.

REVENSTORF, D., VOGEL, B., WEGENER, C., HAHLWEG, K., & SCHINDLER, L. Escalation phenomena in interaction sequences: An empirical comparison of distressed and nondistressed couples. *European Journal of Behavior Analysis and Modification,* 1980, 4, 97-115.

ROBINSON, E.A., & PRICE, M.G. Behavioral and self-report correlates of marital satisfaction. Paper presented at the Association for the Advancement of Behavior Therapy, New York, Dec., 1976.

ROBINSON, E.A., & PRICE, M.G. Pleasurable behavior in marital interaction: An observational study. *Journal of Consulting and Clinical Psychology,* 1980, 48, 117-118.

ROGERS, C.R. *Client centered therapy.* Boston: Houghton Mifflin, 1951.

ROGERS, L.E., & FARACE, R.V. Analysis of relational communication in dyads: New measurement procedures. *Human Communication Research,* 1975, 1, 222-239.

ROSE, S.D. *Group therapy: A behavioral approach.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977.

ROSKIES, E., & LAZARUS, R.S. Coping theory and the teaching of coping skills. In P.O. Davidson & S.M. Davidson (Eds.), *Behavioral medicine: Changing health lifestyles.* New York: Brunner/Mazel, 1980.

ROYCE, W.S., & WEISS, R.L. Behavioral cues in the judgment of marital satisfaction: A linear regression analysis. *Journal of Consulting and Clinical Psychology,* 1975, 43, 816-824.

SADLER, O.W., & SEYDEN, T. Groups for parents: A guide for teaching child management to parents. *Journal of Community Psychology,* 1976, 4, 3-63.

SANSBURY, D.L. The role of the group in behavioral group therapy. In D. Upper & S.M. Ross (Eds.), *Behavioral group therapy, 1979: An annual review.* Champaign, Illinois: Research Press 1979.

SATIR, V. *Conjoint family therapy: A guide to theory and technique.* Palo Alto: Science and Behavior Books, Inc., 1967.

SCHLESINGER, B. Divorce in New Zealand. *One parent families.* University of Toronto, 1979.

SPEER, D.C. Marital dysfunctionality and two-persons non-sum-zero game behavior: Cumulative monadic measures. *Journal of Personality and Social Psychology,* 1972, 21, 18-24.

STEIN, E.V. MARILAB: An experiment in marriage enrichment. *Family Coordinator,* 1975, 24, 167-170.

STOKES, T.F., and BAER, D.M. An implicit technology of generalization. *Journal of Applied Behaviour Analysis,* 1977, 10, 349-367.

STOVER, L., & GUERNEY, B.J. The efficacy of training procedures for mothers in filial therapy. *Psychotherapy: Theory, Research and Practice,* 1967, 4, 110-115.

STRUPP, H.H. Clinical research, practice, and the crisis of confidence. *Journal of Consulting and Clinical Psychology,* 1981, 49, 216-219.

STUART, R.B. Operant-interpersonal treatment for marital discord. *Journal of Consulting and Clinical Psychology,* 1969a, 33, 675-682.

STUART, R.B. Token reinforcement in marital treatment. In R. Rubin and C.M. Franks (Eds.), *Advances in behavioral therapy.* New York: Academic Press, 1969b.

STUART, R.B. A cueing device for the acceleration of the rate of positive interaction. *Journal of Applied Behaviour Analysis,* 1970, 3, 257-260.

STUART, R.B. An operant interpersonal program for couples. In D.H.L. Olson (Ed.), *Treating relationships.* Lake Mills, Iowa: Graphic Publishing Co., Inc., 1976.

STUART, R.B. *Helping couples change: A social learning approach to marital therapy.* New York: The Guilford Press, 1980.

TAPLIN, P.S., & REID, J.B. Effects of instructional set and experimenter influence on observer reliability. *Child Development,* 1973, 44, 547-554.

TENNANT, C., & ANDREWS, G. A scale to measure the stress of life events. *Australian and New Zealand Journal of Psychiatry,* 1976, 10, 27-32.

THIBANT, J., & KELLEY, H.H. *The social psychology of groups.* New York: Wiley, 1959.

THOMAS, E.J., CARTER, R.D., & GAMBRILL, E.D. Some possibilities of behavioral modification with marital problems using 'SAM' (signal system for the assessment and modification of behavior). In R.D. Rubin, H. Fensterheim, A.A. Lazarus, & C.M. Franks (Eds.), *Advances in behavior therapy.* New York: Academic Press, 1971.

TRAVIS, R.P., & TRAVIS, P.Y. The pairing enrichment program: Actualizing the marriage. *The Family Coordinator,* 1975, 24, 161-165.

TSOI-HOSHMAND, L. Marital therapy: An integrative behavioral-learning model. *Journal of Marriage and Family Counseling,* 1976, 2, 179-191.

VAN ZOOST, B. Premarital communication skills education with university students. *The Family Coordinator,* 1973, 22, 187-91.

VALLE, S.K., & MARINELLI, R.P. Training in human relations skills as a preferred mode of treatment for married couples. *Journal of Marriage and Family Counseling,* 1975, 1, 359-365.

VENEMA, H.B. Marriage enrichment: A comparison of the behavioral exchange negotiation and communication models. *Dissertation Abstracts International,* 1976, 26(B), 4184-4185.

VINCENT, J.P., WEISS, R.L., & BIRCHLER, G.R. A behavioral analysis of problem solving in distressed and nondistressed married and stranger dyads. *Behavior Therapy,* 1975, 6, 475-487.

WAHLER, R.G., WINKEL, G.H., PETERSON, R.F., & MORRISON, D.C. Mothers as behavior therapists for their own children. *Behavioral Research and Therapy,* 1965, 3, 113-124.

WEISS, R.L. The conceptualization of marriage from a behavioral perspective. In T.J. Paolino and B.S. McCrady, (Eds.), *Marriage and marital therapy: Psychoanalytic, behavioral and systems theory perspectives.* New York: Brunner/Mazel, Inc., 1978.

WEISS, R.L. Coupling skills: A cognitive behavioural systems approach. *BMA Audio Cassettes.* New York: Guilford Publications Inc., 1980.

WEISS, R.L., & AVED, B.M. Marital satisfaction and depression as predictors of physical health status. *Journal of Consulting and Clinical Psychology,* 1978, 46, 1379-1384.

WEISS, R.L., BIRCHER, G.R., & VINCENT, J.P. Contractual models for negotiation training in marital dyads. *Journal of Marriage and the Family,* 1974, 36, 321-331.

WEISS, R.L., & FORD, L. A social learning view of marriage. Unpublished manuscript, University of Oregon, 1975.

WEISS, R.L., HOPS, H., & PATTERSON, G.R. A framework for conceptualizing marital conflict. In L.A. Hamerlynck, L.C. Handy, & E.J. Mash (Eds.), *Behavior change - Methodology, concepts, and practice: Proceedings of the Fourth Banff International Conference on Behavior Modification.* Champaign, Ill.: Research Press, 1973.

WEISS, R.L., & MARGOLIN, G. Assessment of marital conflict. In A.R. Ciminero, H. Adams, & A. Calhoun (Eds.), *Handbook of behavioral assessment.* New York: John Wiley & Sons, Inc., 1977.

WERTHEIMER, M. Humanistic psychology and the humane but tough-minded psychologist. *American Psychologist,* 1978, 33, 739-745.

WIEDER, G.B., & WEISS, R.L. Generalizability theory and the coding of marital interactions. *Journal of Consulting and Clinical Psychology,* 1980, 48, 469-477.

WIEMAN, R.J. Conjugal relationship modification and reciprocal reinforcement: A comparison of treatments for marital discord. *Dissertation Abstracts International,* 1974, 35(B), 493.

WIEMAN, R.J., SHOULDERS, D.I., & FARR, J.H. Reciprocal reinforcement in marital therapy. *Journal of Behavior Therapy and Experimental Psychiatry,* 1974, 5, 291-295.

WILLS, T.A., WEISS, R.L., & PATTERSON, G.R. A behavioral analysis of the determinants of marital satisfaction. *Journal of Consulting and Clinical Psychology,* 1974, 42, 802-11.

WILSON, G.T. Cognitive factors in lifestyle changes: A social learning perspective. In P.O. Davidson & S.M. Davidson (Eds.), *Behavioural medicine: Changing health lifestyles.* New York: Brunner/Mazel, 1980.

YEATON, W.H., & SECHREST, L. Critical dimensions in the choice and maintenance of successful treatments: Strength, integrity, and effectiveness. *Journal of Consulting and Clinical Psychology,* 1981, 49, 156-167.

ZARLE, T.H., & BOYD, R.C. An evaluation of modeling and experimental procedures for self-disclosure training. *Journal of Counseling Psychology,* 1977, 24, 118-124.

APPENDIX I

CHAPTER II (SELF-REPORT DATA)

Nondistressed Couples

Couple		MPT	MAT	ACQ	SOC			IRA					CTD		
					P-rate	D-rate	Prop P	Act S-P	Total	Act S-R	Prop S	Prop S-R	RTS	RTO	Prop RTS
1.	F	274	131	15	1.98	0.20	.91	31	80	54	.39	.68	5.21	2.43	.68
	M	m.d	144		1.53	0.22	.88	36	92	63	.39	.68	4.86	1.71	.74
2.	F	266	123	12	0.90	0.08	.92	19	43	26	.44	.60	3.57	2.64	.57
	M	338	111		0.84	0.13	.87	21	57	28	.37	.49	3.71	0.93	.80
2.	F	315	107	7	2.05	0.59	.78	19	87	54	.22	.62	3.86	1.50	.72
	M	380	100		2.42	0.68	.78	27	109	72	.25	.66	3.86	1.71	.69
4.	F	367	148	4	3.69	0.61	.86	32	63	43	.51	.68	3.86	1.64	.70
	M	m.d	127		1.79	0.23	.89	35	74	53	.47	.72	3.79	1.79	.68
5.	F	353	148	0	4.19	0.28	.94	17	64	43	.27	.67	2.71	1.86	.59
	M	295	144		3.82	0.24	.94	18	88	48	.20	.55	2.29	1.71	.57
6.	F	325	136	0	m.d	m.d	m.d	19	84	54	.23	.64	m.d	m.d	m.d
	M	341	138		m.d	m.d	m.d	20	77	55	.26	.71	m.d	m.d	m.d

"m.d." indicates missing data

Nondistressed couples (continued)

Couple		MPT	MAT	ACQ	SOC			IRA					CTD		
					P-rate	D-rate	Prop P	Act S-p	Total	Act S-R	Prop Sp	Prop S-R	RTS	RTO	Prop RTS
7.	F	362	145	3	0.51	0.05	.91	15	48	34	.31	.71	5.71	3.43	.62
	M	318	110		0.46	0.08	.85	28	85	51	.33	.60	6.43	0.93	.87
8.	F	337	132	4	1.05	0.25	.81	34	73	39	.47	.53	3.43	2.50	.58
	M	311	104		1.16	0.36	.76	23	69	35	.33	.51	3.21	2.43	.57
9.	F	242	128	10	1.27	0.33	.79	13	41	27	.32	.66	4.71	1.43	.77
	M	164	104		1.10	0.37	.75	26	73	48	.36	.66	5.14	2.29	.69
10.	F	303	113	1	0.42	0.19	.68	37	103	74	.36	.72	2.29	2.00	.53
	M	360	95		0.46	0.12	.79	19	58	36	.36	.68	3.93	3.93	.50
11.	F	280	125	5	1.01	0.20	.83	43	92	54	.47	.59	6.29	3.71	.63
	M	368	127		0.71	0.27	.72	41	85	54	.48	.64	3.71	2.71	.58
12.	F	277	128	1	2.83	0.99	.74	33	115	71	.29	.62	5.14	1.14	.82
	M	305	124		2.96	0.80	.80	35	105	68	.33	.65	5.14	3.0	.63

Nondistressed couples (continued)

Couple		MPT	MAT	ACQ	SOC			IRA					CTD		
					P-rate	D-rate	Prop P	Act Sp	Total	Act S-R	Prop Sp	Prop S-R	RTS	RTO	Prop RTS
13.	F	332	135	0	0.75	0.25	.75	19	48	28	.40	.58	3.71	2.0	.65
	M	292	138		0.79	0.21	.79	19	54	40	.33	.70	4.14	1.14	.78
14.	F	380	122	5	1.53	0.73	.68	17	48	27	.35	.56	2.0	1.54	.56
	M	406	128		1.07	0.49	.69	17	44	27	.39	.61	1.71	0.57	.75
15.	F	322	119	6	0.61	0.23	.73	17	48	32	.35	.67	3.21	1.11	.71
	M	275	114		0.48	0.26	.64	16	46	32	.35	.70	3.36	2.18	.61
16.	F	355	115	3	0.49	0.16	.76	20	76	47	.26	.62	2.57	2.57	.50
	M	401	121		0.73	0.55	.57	22	97	59	.23	.61	2.93	1.86	.61
17.	F	310	125	4	1.63	0.54	.75	20	81	56	.25	.69	2.43	1.79	.58
	M	231	128		0.72	0.20	.78	18	94	58	.19	.62	3.14	2.29	.57
18.	F	252	130	0	1.19	0.05	.96	35	87	76	.41	.87	5.14	0.29	.95
	M	208	134		0.99	0.16	.86	27	78	60	.35	.76	5.36	1.86	.74
19.	F	308	138	0	0.75	0.19	.80	46	52	79	.58	.66	4.29	0.57	.63
	M	333	136		0.64	0.02	.97	39	47	65	.60	.72	4.29	0.29	.97
20.	F	335	136	0	1.37	0.21	.87	40	83	56	.48	.67	2.93	0.43	.87
	M	356	136		.93	0.11	.89	39	86	53	.44	.61	2.93	1.54	.66

Distressed Couples

Couple		MPT	MAT	ACQ	SOC			IRA					CTD		
					P-rate	D-rate	Prop P	Act S p	Total	Act S-R	Prop Sp	Prop S-R	RTS	RTO	Prop RTS
21.	F	293	26	41	0.14	0.26	.35	4	55	6	.07	.11	0.50	4.42	.10
	M	276	47		0.04	0.14	.22	5	28	6	.18	.21	0.50	0.71	.41
22.	F	200	63	18	0.18	0.27	.40	7	28	12	.25	.43	0.60	0.60	.50
	M	333	69		0.29	0.21	.58	9	30	13	.30	.43	2.10	2.5	.46
23.	F	321	28	36	0.22	0.31	.42	9	92	42	.10	.46	3.21	2.64	.55
	M	277	54		0.35	0.17	.68	13	46	25	.28	.54	3.93	1.57	.71
24.	F	302	90	19	0.92	0.27	.77	32	111	56	.29	.50	5.0	1.79	.74
	M	275	39		2.00	1.68	.54	24	57	43	.42	.75	2.43	2.14	.53
25.	F	273	70	30	0.57	0.28	.68	32	91	42	.35	.46	2.86	2.29	.63
	M	281	72		0.73	0.33	.69	21	34	22	.62	.65	3.86	3.71	.43
26.	F	266	39	38	0.17	0.63	.21	16	62	28	.26	.45	0.79	2.0	.28
	M	253	26		0.34	0.86	.29	21	69	28	.30	.41	4.58	1.58	.74
27.	F	276	81	12	m.d	m.d	m.d	19	81	34	.23	.42	2.14	3.50	.38
	M	314	109		m.d	m.d	m.d	16	46	29	.35	.63	1.50	2.00	.43
28.	F	281	35	21	2.67	8.67	.24	3	47	20	.06	.43	1.64	2.14	.43
	M	272	75		3.60	2.00	.64	8	40	20	.20	.50	1.70	4.64	.27

Distressed couples (continued)

Couple		MPT	MAT	ACQ	SOC			IRA					CTD		
					P-rate	D-rate	Prop P	Act S-p	Total	Act S-R	Prop Sp	Prop S-R	RTS	RTO	Prop RTS
29.	F	m.d	31	17	0.33	0.57	.37	14	31	14	.45	.45	0.57	4.43	.11
	M	m.d	78		0.66	0.70	.49	8	20	10	.40	.50	2.57	2.14	.55
30.	F	299	38	47	0.20	0.49	.29	5	49	16	.10	.33	m.d	m.d	m.d
	M	189	63		0.28	0.44	.39	6	48	31	.13	.65	m.d	m.d	m.d
31.	F	291	114	21	0.68	0.44	.61	18	54	34	.33	.63	1.46	0.00	1.0
	M	445	100		0.77	0.33	.70	24	71	41	.34	.58	3.14	0.50	.86
32.	F	331	69	15	2.07	1.08	.64	23	62	34	.37	.55	2.07	1.00	.67
	M	293	67		2.14	0.98	.69	15	56	26	.27	.46	3.21	2.21	.59
33.	F	221	43	37	0.85	0.58	.60	13	65	44	.20	.68	1.71	0.00	1.0
	M	279	88		0.81	0.47	.63	15	36	27	.42	.75	1.71	0.29	.86
34.	F	324	37	29	0.59	0.37	.61	5	30	13	.17	.43	2.29	0.42	.85
	M	320	36		0.92	0.24	.80	9	29	17	.31	.59	2.86	1.00	.74
35.	F	m.d	59	29	m.d	m.d	m.d	11	35	13	.31	.37	m.d	m.d	m.d
	M	m.d	56		m.d	m.d	m.d	18	55	28	.33	.51	m.d	m.d	m.d
36.	F	236	104	23	0.81	0.62	.57	10	43	22	.23	.51	1.36	1.29	.51
	M	178	108		0.53	0.45	.54	17	67	42	.25	.62	1.64	1.86	.47

Distressed couples (continued)

Couple		MPT	MAT	ACQ	SOC			IRA					CTD		
					P-rate	D-rate	Prop P	Act S-p	Total	Act S-R	Prop Sp	Prop S-R	RTS	RTO	Prop RTS
37.	F	237	62	27	0.88	0.18	.83	8	56	15	.14	.26	0.00	2.00	.00
	M	371	101		0.69	0.15	.82	9	38	18	.24	.47	4.29	2.71	.61
38.	F	352	87	31	0.64	0.53	.55	32	73	57	.44	.78	3.50	0.79	.82
	M	156	84		0.79	0.45	.64	19	67	51	.28	.76	3.60	0.50	.88
39.	F	258	41	36	0.82	0.85	.49	16	60	24	.27	.40	0.50	0.29	.63
	M	240	75		0.92	0.84	.52	23	72	45	.32	.62	4.36	0.93	.82
40.	F	391	65	23	0.77	0.56	.58	31	85	51	.36	.60	4.43	2.71	.62
	M	333	68		0.82	0.46	.64	30	95	70	.31	.74	2.57	2.29	.53

Nondistressed Couples

Couple		PS	PV	PNV	NV	NNV
1.	F	0.75	0.38	6.75	0.25	0.00
	M	1.88	0.88	2.25	0.00	0.13
2.	F	1.44	0.56	3.00	0.00	0.00
	M	0.44	0.00	3.00	0.00	0.67
3.	F	1.50	0.13	3.38	0.00	1.38
	M	1.50	0.13	1.25	0.25	0.50
4.	F	0.89	0.33	3.78	0.00	0.11
	M	1.00	0.56	1.11	0.11	0.78
5.	F	1.75	1.38	1.88	0.13	0.00
	M	1.13	2.63	1.88	0.25	0.00
6.	F	1.00	0.78	2.11	0.11	0.11
	M	0.56	0.56	2.00	0.44	2.67
7.	F	0.25	0.88	2.63	0.88	0.00
	M	0.75	0.75	2.75	0.38	0.75
8.	F	0.40	0.80	2.10	0.20	0.50
	M	1.60	0.30	2.90	0.00	0.20
9.	F	0.74	0.21	5.16	0.11	0.11
	M	0.74	1.05	2.42	0.11	0.95
10.	F	1.37	0.11	2.42	0.21	0.00
	M	0.53	0.84	4.42	0.00	0.21
11.	F	1.30	1.20	4.50	0.00	0.30
	M	1.40	1.30	3.80	0.10	0.90
12.	F	0.20	1.20	3.60	0.20	0.30
	M	0.00	0.80	4.20	0.10	1.60
13.	F	0.47	0.82	6.24	0.00	0.00
	M	0.71	0.35	4.12	0.12	0.00
14.	F	1.78	0.33	2.44	0.00	0.11
	M	1.78	0.44	2.00	0.00	0.22
15.	F	0.60	0.40	4.60	0.00	0.40
	M	1.30	0.80	2.20	0.00	0.80
16.	F	1.88	0.47	5.06	0.00	0.00
	M	1.76	0.35	2.00	0.24	0.00
17.	F	1.57	0.43	1.57	0.00	0.71
	M	0.14	0.71	7.14	0.14	0.29
18.	F	0.90	0.60	4.70	0.00	0.20
	M	0.50	0.50	3.10	0.00	0.10
19.	F	2.67	0.22	3.89	0.00	0.11
	M	1.56	0.78	3.78	0.22	0.11

Distressed Couples

Couple		PS	PV	PNV	NV	NNV
21.	F	0.84	0.11	0.53	4.63	0.63
	M	0.53	0.11	3.37	4.00	0.11
22.	F	0.30	0.10	2.60	0.40	1.30
	M	0.40	0.10	1.10	0.80	2.20
23.	F	0.21	0.21	2.53	0.63	2.11
	M	0.53	0.84	2.32	0.11	1.47
24.	F	0.11	0.00	2.00	0.42	1.37
	M	0.11	0.42	1.16	3.37	1.68
25.	F	0.10	0.20	3.10	0.80	0.60
	M	0.60	0.50	2.50	0.60	0.60
26.	F	0.40	0.40	3.50	3.10	1.30
	M	0.00	0.20	1.40	4.30	0.90
27.	F	0.84	1.58	4.42	1.16	0.11
	M	1.47	1.05	2.11	0.63	0.00
28.	F	0.00	0.30	1.60	6.50	1.80
	M	0.30	0.50	3.60	3.80	0.60
29.	F	1.00	0.40	0.70	6.80	1.20
	M	0.60	0.90	0.70	5.60	1.20
30.	F	0.20	0.20	0.80	2.30	1.00
	M	0.60	1.30	1.00	3.10	1.40
31.	F	0.12	0.71	1.76	3.29	0.71
	M	0.24	0.47	0.94	4.00	0.47
32.	F	0.89	0.22	2.00	3.33	0.11
	M	0.44	0.22	0.44	2.56	1.78
33.	F	0.42	0.53	2.21	7.05	0.63
	M	0.42	1.37	0.63	6.53	1.37
34.	F	0.13	0.27	0.27	4.13	1.87
	M	0.67	0.27	0.67	1.73	1.33
35.	F	1.33	0.44	3.56	1.22	0.89
	M	0.78	0.56	3.11	0.44	0.44
36.	F	0.20	0.20	1.70	5.00	0.20
	M	0.20	0.50	1.10	1.30	1.60
37.	F	1.00	0.30	3.00	0.50	0.50
	M	0.40	0.30	1.00	0.60	1.60
38.	F	0.30	0.30	1.50	3.90	0.20
	M	0.50	0.40	2.10	0.30	1.40
39.	F	0.60	0.20	0.40	3.70	1.30
	M	0.70	0.70	0.90	1.90	1.30

CHAPTER IV (SELF-REPORT DATA)

Couple D7

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	159	25	31	0.86	0.98	.47	.22	0.29	.08	15	54	10	15	28	27
	M	301	64		0.70	1.33	.34	.49	0.71	.19	9	34	1	12	42	52
Post	F		78	24	1.78	0.19	.91	.49	0.93	.22	7	42	10	11	4	20
	M		92		1.67	0.20	.89	.65	2.86	.43	3	11	0	0	13	41
3 mths	F		94								11	36	9	11	5	30
	M		121								m.d	16	0	3	3	28
6 mths	F		46	31	0.94	0.24	.80	.35	1.43	.16	33	65	9	29	2	2
	M		41		2.13	0.80	.73	.60	1.57	.29	3	15	1	4	9	10
9 mths	F		69								7	42	7	12	28	47
	M		73								1	21	5	1	53	104
12 mths	F		73	25	1.51	0.35	.81	.65	0.43	.07	m.d	40	8	9	77	60
	M		73		1.58	0.33	.83	.62	1.86	.54	2	18	2	4	30	63
15 mths	F		81								13	41	14	7	21	41
	M		64								4	12	3	1	17	14
18 mths	F		47	28	m.d	m.d	.71	.26	0.29	.06	31	48	10	13	2	2
	M		70		m.d	m.d	.74	.55	1.71	.44	11	22	4	3	25	19

Couple D8

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	267	44	21	0.69	0.64	.52	.46	1.71	.44	0	43	5	9	32	62
	M	254	65		1.08	0.95	.53	.59	3.14	.63	5	19	0	3	50	158
Post	F		67	27	1.20	0.14	.89	.53	2.57	.64	9	37	6	9	31	56
	M		126		0.95	0.12	.89	.59	4.14	.69	4	22	3	1	33	114
3 mths	F		57								16	29	4	6	5	25
	M		81								4	17	0	1	40	134
6 mths	F		79	25	1.42	0.03	.98	.59	3.86	.57	2	27	4	3	10	58
	M		79		1.09	0.19	.85	.57	4.43	.72	8	28	3	7	50	163
9 mths	F		53								4	31	4	5	5	44
	M		80								1	5	0	1	23	71
12 mths	F		67	17	0.89	0.23	.80	.46	5.79	.71	1	25	5	3	6	57
	M		85		0.95	0.32	.75	.64	5.79	.71	2	13	1	2	13	61
15 mths	F		64								4	24	4	4	3	23
	M		90								3	16	1	2	30	147
18 mths	F		39	38	0.40	0.26	.61	.26	.29	.10	35	34	4	14	28	27
	M		26		m.d	m.d	m.d	.36	m.d	m.d	24	50	8	16	77	143

Couple D9

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	359	66	23	0.21	0.54	.28	.48	2.14	.48	11	44	6	10	28	19
	M	263	91		0.27	0.10	.72	.56	3.57	.57	13	40	4	13	35	35
Post	F		70	11	0.32	0.37	.47	.70	1.07	.43	11	23	3	8	2	28
	M		106		0.62	0.51	.55	.74	4.00	.70	10	20	2	2	2	28
3 mths	F		78								9	26	3	7	34	47
	M		106								6	39	7	6	4	20
6 mths	F		71	21	0.44	0.38	.54	.57	3.14	.44	2	24	3	4	35	46
	M		89		0.84	0.34	.71	.62	2.86	.56	1	21	4	2	34	23
9 mths	F		48								12	32	4	9	2	2
	M		74								24	39	2	12	0	0
12 mths	F		72	14	0.58	0.39	.60	.58	3.67	.50	12	32	3	8	28	24
	M		72		0.35	0.40	.47	.60	2.57	.41	21	36	4	13	28	24
15 mths	F		70								6	29	5	5	31	24
	M		67								10	33	5	13	16	9
18 mths	F		58	21	0.47	0.57	.45	.36	1.50	.41	18	29	4	9	0	0
	M		82		0.39	0.33	.54	.50	1.86	.39	17	38	3	14	0	0

Couple D10

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	272	61	23	1.68	1.13	.60	.56	3.43	.65	8	41	7	18	17	26
	M	361	61		1.10	0.55	.66	.58	3.00	.68	26	47	6	18	41	40
Post	F		68	11	1.21	0.25	.83	.50	2.14	.56	19	43	12	14	47	85
	M		75		0.54	0.25	.68	.56	0.57	.24	24	49	9	20	41	62
3 mths	F		75								26	44	8	14	39	85
	M		76								19	44	8	14	51	91
6 mths	F		82	14	1.47	0.42	.78	.61	2.57	.39	16	49	9	20	40	63
	M		73		0.84	0.37	.70	.70	1.00	.44	20	43	7	11	24	50
9 mths	F		71								5	45	11	12	4	20
	M		62								20	41	8	9	4	20
12 mths	F		74	2	0.55	0.26	.68	.51	1.86	.48	10	29	9	6	14	33
	M		78		0.41	0.26	.62	.71	1.29	.50	17	23	4	5	14	33
15 mths	F		104								2	22	4	6	13	20
	M		88								14	33	9	9	14	34
18 mths	F		89	5	0.87	0.36	.61	.41	2.29	.48	5	20	3	3	13	13
	M		85		0.53	0.38	.58	.40	1.57	.41	15	21	7	4	5	30

Couple D11

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	331	62	31	0.30	0.09	.76	.32	1.50	.50	19	48	4	20	120	140
	M	347	91		0.38	0.26	.59	.28	1.86	.74	8	52	2	15	81	124
Post	F		83	3	0.82	0.26	.76	.58	2.29	.21	10	6	0	2	2	18
	M		117		0.69	0.14	.83	.66	3.00	.86	0	25	0	1	18	45
3 mths	F		111								8	11	1	2	12	33
	M		118								3	11	2	1	10	15
6 mths	F		124	0	0.47	0.05	.91	.55	4.42	.76	2	7	1	2	11	12
	M		127		0.70	0.14	.83	.54	1.21	.73	5	13	2	1	9	10
9 mths	F		130								5	12	2	3	26	31
	M		132								0	7	1	0	32	30
12 mths	F		114	4	0.56	0.16	.77	.45	10.21	.86	12	12	2	2	11	12
	M		117		0.76	0.21	.79	.55	3.14	.83	0	8	0	0	16	27
15 mths	F		118								12	18	2	10	11	36
	M		113								0	5	0	0	0	0
18 mths	F		112	7	0.42	0.02	.95	.43	6.0	.58	5	17	1	6	11	36
	M		120		0.28	0.04	.87	.70	3.71	.91	0	6	0	0	2	2

Couple D12

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	252	81	39	0.31	0.11	.73	.64	3.20	.78	13	67	11	16	8	50
	M	214	63		0.21	0.25	.45	.11	4.07	.56	7	35	3	10	1	5
Post	F		128	3	0.44	0.10	.82	.67	6.43	.92	5	29	4	2	8	44
	M		128		0.36	0.09	.80	.61	6.43	.80	5	15	1	1	8	44
3 mths	F		127								2	32	5	6	36	60
	M		119								7	28	3	5	39	72
6 mths	F		125	3	0.26	0.04	.88	.53	3.57	.42	0	15	2	2	25	52
	M		123		0.26	0.01	.96	.67	3.57	.64	7	17	0	2	25	52
9 mths	F		129								4	21	2	2	21	38
	M		131								6	16	3	0	46	61
12 mths	F		138	0	0.60	0.05	.93	.64	5.71	.82	7	19	5	2	4	26
	M		127		0.56	0.05	.92	.64	6.21	.76	6	16	1	2	19	62
15 mths	F		136								4	14	5	0	30	31
	M		128								8	15	3	0	10	13
18 mths	F		125	2	0.25	0.02	.92	.50	3.86	.35	7	20	6	2	12	40
	M		120		0.22	0.02	.91	.60	3.86	.45	8	20	4	0	12	40

Couple D13

TIME		MPT	MAT	ACQ	SOC			IRA	CTD		SRS	SCL			LEQ	
					P-rate	D-rate	Prop P	Prop S-R	RTS	Prop RTS		SCL-T	SCL-S	SCL-D	LEQ-S	LEQ-C
Pre	F	286	61	13	0.40	0.35	.53	.46	2.00	.56	1	22	5	2	32	14
	M	273	53		0.17	0.17	.50	.53	2.00	1.0	42	60	15	24	22	26
Post	F		77	6	0.60	0.17	.78	.64	3.43	.89	0	11	3	0	0	0
	M		67		0.67	0.10	.87	.53	3.57	.64	19	45	12	10	2	2
3 mths	F		91								7	20	3	2	9	10
	M		54								23	35	8	10	12	11
6 mths	F		78	10	0.51	0.08	.87	.61	2.86	.80	3	26	5	4	22	49
	M		70		0.50	0.05	.91	.42	2.86	.49	12	32	14	7	2	2
9 mths	F		81								0	16	5	0	0	0
	M		69								17	28	6	11	0	0
12 mths	F		79	4	0.40	0.05	.88	.51	2.57	.86	0	15	5	5	9	10
	M		63		0.39	0.02	.95	.40	2.57	1.0	15	23	7	9	49	61
15 mths	F		59								3	15	3	1	1	23
	M		58								12	23	5	9	2	27
18 mths	F		60	6	0.74	0.18	.80	.69	1.50	.49	0	22	4	7	9	10
	M		50		0.83	0.11	.88	.19	1.18	.40	19	32	11	5	36	45

Completer Couples

Time	Couple		PS	PV	PNV	NV	NNV
Pre	D7	F	0.00	0.20	0.80	4.00	1.40
		M	0.00	0.30	1.40	3.70	0.40
Post		F	0.00	0.53	1.68	1.05	2.21
		M	0.63	0.11	4.84	0.32	0.53
6 mths		F	0.00	0.20	0.70	4.20	1.30
		M	0.40	0.20	2.20	3.60	0.00
12 mths		F	1.56	0.78	3.11	0.00	0.44
		M	1.00	0.33	3.11	0.00	0.22
18 mths		F					
		M	m.d	m.d	m.d	m.d	m.d
Pre	D8	F	0.67	0.33	2.11	5.67	0.22
		M	0.67	0.89	1.33	4.33	0.67
Post		F	0.40	0.60	2.90	1.30	0.00
		M	0.70	0.40	2.00	0.30	0.10
6 mths		F	0.70	0.70	7.40	0.10	0.10
		M	0.40	0.90	2.20	1.00	0.10
12 mths		F	0.11	0.00	3.67	0.11	0.22
		M	0.22	0.67	2.33	0.22	0.44
18 mths		F	0.30	0.40	3.90	0.30	0.10
		M	0.40	0.50	2.50	0.10	0.10

Time	Couple		PS	PV	PNV	NV	NNV
Pre	D9	F	0.80	0.10	1.30	3.10	1.00
		M	0.60	0.10	1.50	2.80	0.90
Post		F	0.30	0.60	2.60	0.70	0.10
		M	1.30	0.40	2.20	0.30	0.40
6 mths		F	0.50	0.30	2.90	0.70	0.60
		M	0.20	0.10	1.40	2.00	0.60
12 mths		F	0.20	0.00	1.00	3.20	1.80
		M	0.00	0.00	0.60	4.00	1.30
18 mths		F	1.80	0.20	2.80	0.50	0.20
		M	1.30	0.80	1.70	0.50	0.80
Pre	D10	F	0.00	0.00	1.33	4.89	0.11
		M	0.67	0.33	1.44	0.89	1.11
Post		F	0.30	0.20	3.30	0.20	0.00
		M	0.40	0.50	3.40	0.30	0.20
6 mths		F	0.30	0.40	4.80	0.10	0.20
		M	0.30	1.00	2.70	0.10	0.30
12 mths		F	1.58	0.32	3.79	0.00	0.11
		M	0.95	0.74	2.21	0.00	0.74
18 mths		F	0.80	0.00	4.90	0.20	0.00
		M	1.00	0.90	3.70	0.00	0.00

Completer couples (continued)

Time	Couple		PS	PV	PNV	NV	NNV
Pre	D11	F	0.71	0.82	2.12	1.06	2.12
		M	0.35	0.12	2.71	2.35	0.24
Post		F	0.60	1.20	4.40	0.20	0.00
		M	0.60	0.60	1.40	0.00	0.00
6 mths		F	1.10	0.10	3.60	0.00	0.00
		M	0.10	0.10	2.80	0.00	0.10
12 mths		F	0.60	0.40	2.40	0.10	0.00
		M	0.40	0.30	2.60	0.10	0.00
18 mths		F	0.80	0.60	2.60	0.00	0.50
		M	0.20	0.10	3.60	0.00	0.70
Pre	D12	F	1.00	0.80	1.70	0.40	0.40
		M	0.40	0.30	2.10	0.70	0.20
Post		F	1.00	0.44	3.44	0.00	0.22
		M	1.11	0.22	2.89	0.00	0.00
6 mths		F M	m.d	m.d	m.d	m.d	m.d
12 mths		F M	m.d	m.d	m.d	m.d	m.d
18 mths		F	1.40	0.60	3.70	0.00	1.10
		M	1.40	0.80	1.90	0.00	0.00

Time	Couple		PS	PV	PNV	NV	NNV
Pre	D13	F	0.74	0.84	1.05	1.89	0.95
		M	1.26	0.74	1.26	1.79	0.74
Post		F	1.30	0.50	2.50	0.00	0.00
		M	1.10	0.60	2.20	0.00	0.00
6 mths		F	1.47	0.32	2.63	0.11	0.32
		M	1.79	0.32	3.89	0.11	0.21
12 mths		F	1.06	0.12	1.53	0.71	0.59
		M	0.71	0.94	3.41	0.24	0.24
18 mths		F	m.d	m.d	m.d	m.d	m.d

APPENDIX III

CHAPTER V (SELF-REPORT DATA)
Experimental Couples
Couple NM1

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	251	106	6	0.44	0.25	.64	.67	.62	47	25	53
	M	323	122		0.53	0.21	.71	.66	.59	40	25	53
Post	F		126	6	0.70	0.50	.58	.76	.88	29	14	73
	M		112		0.63	0.23	.73	.59	.89	29	65	145
3 mths	F		93							26	80	171
	M		112							31	69	182
6 mths	F		131	2	0.95	0.22	.85	.39	.65	30	44	54
	M		112		0.88	0.07	.93	.43	.63	15	17	58
9 mths	F		m.d							m.d	m.d	m.d
	M		m.d							m.d	m.d	m.d
12 mths	F		133	1	1.20	0.26	.82	.71	.67	23	32	75
	M		108		1.39	0.22	.86	.62	.64	25	26	48
15 mths	F		117							20	18	42
	M		110							19	26	48
18 mths	F		114	1	0.69	0.18	.79	.63	m.d	14	10	55
	M		140		0.83	0.16	.84	.47	m.d	15	86	131

Couple NM2

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	322	125	1	0.75	0.19	.80	.59	.90	55	34	86
	M	322	128		0.84	0.25	.77	.65	.87	19	65	120
Post	F		146	0	1.94	0.13	.94	.56	.54	42	20	54
	M		141		3.36	0.19	.95	.74	.63	10	20	60
3 mths	F		142							44	10	50
	M		144							10	4	33
6 mths	F		139	0	2.74	0.25	.92	.53	.57	51	5	30
	M		137		3.20	0.28	.92	.74	.81	13	2	2
9 mths	F		145							m.d	7	60
	M		146							m.d	10	50
12 mths	F		140	0	2.45	0.43	.85	.53	.74	57	7	49
	M		145		2.37	0.32	.88	.71	.81	24	7	48
15 mths	F		127							35	75	55
	M		133							24	74	76
18 mths	F		138	0	2.16	0.40	.84	.56	.63	31	79	70
	M		137		2.32	0.42	.85	.68	.67	21	74	66

Couple NM3

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	253	131	0	1.19	0.05	.96	.87	.95	15	41	89
	M	209	135		0.99	0.16	.86	.76	.74	31	13	38
Post	F		154	0	2.90	0.11	.96	.86	.81	21	20	29
	M		131		4.02	0.19	.96	.87	.86	20	2	18
3 mths	F		144							18	8	66
	M		133							19	12	73
6 mths	F		143	0	1.03	0.20	.84	.88	.75	23	29	50
	M		99		0.94	0.13	.88	.63	.93	27	44	36
9 mths	F		136							25	32	14
	M		107							18	67	49
12 mths	F		126	0	1.97	0.19	.91	.89	.47	27	30	12
	M		107		1.29	0.13	.91	.70	.51	11	17	14
15 mths	F		145							12	16	9
	M		124							7	4	20
18 mths	F		127	0	1.50	0.05	.97	.82	.41	28	19	50
	M		122		1.78	0.06	.97	.67	.23	10	9	35

COUPLE NM4

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	308	136	0	0.53	0.03	.94	.72	1.0	33	33	24
	M	333	133		0.51	0.03	.94	.74	1.0	32	44	37
Post	F		142	0	3.41	0.22	.94	.73	.81	27	14	97
	M		142		3.65	0.15	.96	.73	.79	24	23	102
3 mths	F		141							13	4	21
	M		136							15	1	5
6 mths	F		140	0	2.30	0.13	.94	.63	1.0	11	11	18
	M		141		3.00	0.14	.96	.69	.90	15	5	7
9 mths	F		150							9	1	23
	M		149							11	20	80
12 mths	F		148	0	2.37	0.05	.98	.64	.79	11	11	31
	M		151		2.39	0.05	.98	.58	.79	13	42	79
15 mths	F		m.d							17	11	47
	M		m.d							12	36	105
18 mths	F		147	0	2.64	0.36	.88	.65	.54	8	2	2
	M		149		2.44	0.24	.91	.66	.52	11	18	11

Couple NN5

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	301	125	3	1.27	0.19	.87	.52	.60	44	11	45
	M	281	131		0.99	0.17	.85	.53	.52	26	21	83
Post	F		125	7	2.68	0.09	.97	.69	.65	35	24	110
	M		128		2.35	0.17	.93	.69	.68	25	3	41
3 mths	F		132							17	16	42
	M		138							21	12	66
6 mths	F		135	2	0.74	0.04	.95	.64	.59	11	13	50
	M		135		0.79	0.04	.95	.64	.54	21	0	0
9 mths	F		136							9	0	0
	M		135							12	11	23
12 mths	F		137	3	0.83	0.10	.89	.74	.57	15	1	5
	M		147		0.63	0.02	.96	.69	.90	19	1	5
15 mths	F		146							16	3	16
	M		136							13	24	91
18 mths	F		145	1	0.64	0.12	.83	.70	.46	8	7	45
	M		145		0.65	0.12	.84	.59	.46	13	24	91

Couple NM6

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	268	51	12	0.68	0.54	.56	.54	.50	40	18	54
	M	305	104		0.77	0.32	.71	.60	.52	23	6	13
Post	F		87	4	m.d	m.d	m.d	.60	.71	47	14	33
	M		121		m.d	m.d	m.d	.42	.53	32	6	35
3 mths	F		76							49	36	75
	M		121							32	6	35
6 mths	F		90	0	1.34	0.32	.81	.59	.46	40	6	46
	M		131		1.20	0.24	.83	.60	.50	33	58	49
9 mths	F		88							36	24	35
	M		123							25	24	55
12 mths	F		m.d	2	0.82	0.26	.76	.70	.64	43	m.d	m.d
	M		m.d		0.69	0.07	.91	.56	.66	28	m.d	m.d
15 mths	F		98							42	34	79
	M		145							19	6	74
18 mths	F		76	20	0.24	0.24	.49	.43	.51	30	12	35
	M		102		0.78	0.25	.76	.70	m.d	27	8	40

Couple NM7

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
Pre	F	329	132	12	0.66	0.02	.98	.65	.69	20	12	35
	M	342	128		0.75	0.02	.98	.76	.65	14	6	13
Post	F		123	2	0.79	0.02	.98	.74	.64	33	2	2
	M		123		0.71	0.03	.96	.74	.59	15	9	35
3 mths	F		129							20	0	0
	M		131							21	10	
6 mths	F		121	3	0.66	0.02	.95	.76	.80	20	11	7
	M		119		0.88	0.05	.95	.71	.91	9	11	7
9 mths	F		118							15	21	15
	M		118							9	0	0
12 mths	F		123	3	0.83	0.00	1.0	.61	.69	14	5	18
	M		126		0.78	0.03	.96	.64	.92	6	10	9
15 mths	F		129							11	17	61
	M		118							6	1	5
18 mths	F		132	0	0.63	0.00	1.0	.61	.43	10	0	0
	M		138		0.87	0.00	1.0	.60	.71	3	0	0

Control couples

Couple NM8

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	383	140	2	1.67	0.52	.76	.65	.64	12	25	121
	M	292	142		1.22	0.85	.59	.66	.64	37	8	82
3 mths	F		120							19	4	30
	M		138							34	20	106
6 mths	F		141	1	1.78	0.36	.83	.68	.62	18	43	32
	M		144		1.42	0.29	.83	.71	.59	27	38	34
9 mths	F		145							15	2	28
	M		141							23	1	23
12 mths	F		135	3	1.16	0.27	.81	.69	.74	18	1	5
	M		127		1.00	0.24	.81	.67	.66	30	21	16

Couple NM9

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	314	139	6	0.99	0.07	.93	.64	.48	28	18	83
	M	356	119		0.87	0.14	.86	.67	.72	11	23	115
3 mths	F		133							30	15	33
	M		105							25	35	90
6 mths	F		130	1	1.07	0.07	.96	.74	.75	31	9	10
	M		117		1.28	0.14	.97	.64	.64	17	9	10
9 mths	F		127							30	30	79
	M		113							25	13	45
12 mths	F		125	6	0.59	0.03	.95	.64	.76	36	12	26
	M		111		0.61	0.12	.84	.47	.57	38	36	74

Couple NM10

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	333	118	4	1.60	0.33	.83	.76	.74	37	80	128
	M	375	102		1.48	0.25	.85	.71	.79	23	33	102
3 mths	F		116							41	61	119
	M		117							17	8	20
6 mths	F		114	12	1.81	0.35	.84	.63	.82	40	33	53
	M		108		1.75	0.33	.84	.74	.84	23	6	38
9 mths	F		112							42	114	81
	M		120							25	97	111
12 mths	F		102	22	1.47	0.29	.83	.69	.82	33	32	66
	M		105		1.33	0.33	.80	.70	.85	27	36	55

Couple NM11

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	280	126	13	0.74	0.18	.80	.66	.81	30	16	62
	M	336	110		0.59	0.22	.73	.59	.89	39	41	142
3 mths	F		131							25	26	51
	M		114							29	29	72
6 mths	F		131	10	0.86	0.26	.77	.70	.67	19	28	69
	M		106		0.86	0.25	.85	.56	.67	24	1	5
9 mths	F		133							25	28	69
	M		129							24	17	14
12 mths	F		134	10	2.06	.62	.77	.72	.91	24	19	16
	M		105		1.17	.58	.67	.57	.95	17	17	14

Couple NM12

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	334	135	0	1.37	0.21	.87	.67	.87	21	36	114
	M	355	135		0.93	0.11	.89	.61	.66	19	7	87
3 mths	F		126							25	20	27
	M		127							21	6	13
6 mths	F		126	0	1.63	0.37	.81	.81	.93	25	61	52
	M		106		1.33	0.24	.85	.66	.43	19	5	18
9 mths	F		125							18	15	47
	M		128							19	8	22
12 mths	F		127	0	1.48	0.17	.90	.76	.88	20	10	24
	M		123		0.87	0.17	.84	.64	.67	19	4	21

Couple NM13

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	316	118	2	0.51	0.19	.73	.74	.65	21	8	23
	M	333	93		0.30	0.16	.66	.66	.58	35	26	62
3 mths	F		104							21	12	26
	M		104							45	43	111
6 mths	F		120	7	0.26	0.16	.63	.67	.71	19	6	39
	M		111		0.29	0.37	.44	.59	.50	25	35	93
9 mths	F		122							20	10	13
	M		113							48	26	75
12 mths	F		121	3	0.25	0.11	.68	.62	.60	22	6	23
	M		114		0.36	0.19	.66	.65	.48	55	25	101

TIME		MPT	MAT	ACQ	SOC			IRA	CTD	SCL	LEQ	
					P-rate	D-rate	Prop P	Prop S-R	Prop RTS	Total	Stress	Change
0 mths	F	168	93	20	0.52	0.22	.70	.68	.47	19	11	82
	M	233	92		0.68	0.36	.65	.78	.49	12	6	64
3 mths	F		113							18	45	65
	M		116							9	0	0
6 mths	F		104	15	0.82	0.39	.68	.61	.44	17	11	18
	M		99		0.76	0.32	.70	.67	.71	8	1	5
9 mths	F		90							24	43	56
	M		90							9	0	0
12 mths	F		110	6	0.46	0.23	.67	.71	1.0	13	27	93
	M		81		0.36	0.31	.54	.57	.50	9	0	0

Experimental couples

Time	Couple		PS	PV	PNV	NV	NNV
Pre	NM1	F	0.42	0.32	2.53	0.00	1.58
		M	1.68	0.74	3.47	0.00	0.21
Post		F	2.00	0.82	4.94	0.00	0.71
		M	1.88	1.41	3.29	0.12	0.00
6 mths		F	0.40	0.20	6.60	0.00	0.10
		M	1.70	0.90	3.80	0.00	0.00
12 mths		F	m.d	m.d	m.d	m.d.	m.d
		M					
Pre	NM2	F	1.26	0.42	4.21	0.21	0.32
		M	0.74	1.16	2.63	0.42	0.53
Post		F	0.94	0.24	3.76	0.00	0.12
		M	0.82	0.12	3.53	0.12	0.00
6 mths		F	0.20	0.30	4.90	0.00	0.50
		M	0.90	0.60	2.40	0.00	0.00
12 mths		F	1.47	0.84	6.00	0.00	0.21
		M	1.68	0.11	2.11	0.00	0.00

Time	Couple		PS	PV	PNV	NV	NNV
Pre	NM3	F	0.40	0.00	1.70	0.50	2.10
		M	0.30	0.30	1.10	0.20	1.60
Post		F	1.00	0.10	4.30	0.00	0.00
		M	1.20	0.20	2.40	0.10	0.00
6 mths		F	0.70	0.30	2.40	0.00	0.10
		M	0.50	0.20	1.90	0.10	0.20
12 mths		F	0.20	0.20	2.40	0.00	0.00
		M	0.50	0.00	1.40	0.00	0.10
Pre	NM4	F	1.68	0.83	8.00	0.21	0.21
		M	0.98	0.74	2.74	0.53	0.21
		F	1.58	1.05	4.74	0.53	0.21
		M	1.47	1.05	3.05	0.42	0.00
6 mths		F	1.70	1.50	4.80	0.00	0.40
		M	0.80	0.50	1.80	0.00	1.40
12 mths		F	m.d	m.d	m.d	m.d	m.d
		M					

Experimental couples continued

Time	Couple		PS	PV	PNV	NV	NNV
Pre	NM5	F	0.95	0.63	6.11	0.11	0.11
		M	0.63	0.84	2.11	0.32	0.00
Post		F	1.14	1.43	6.00	0.43	0.00
		M	0.29	1.43	3.71	0.14	0.00
6 mths		F	0.90	0.50	5.70	0.00	0.20
		M	0.40	1.10	2.90	0.00	0.30
12 mths		F	1.30	0.40	4.20	0.00	0.00
		M	0.90	0.40	3.50	0.00	0.70
Pre	NM6	F	0.78	1.22	3.11	2.22	0.56
		M	0.67	0.67	3.44	1.44	0.67
Post		F	0.00	0.59	4.35	2.35	0.12
		M	0.71	0.47	1.53	3.18	0.24
6 mths		F	0.00	0.50	2.70	4.30	0.10
		M	0.10	0.60	2.40	4.10	0.30
12 mths		F	0.29	0.57	5.14	0.29	0.14
		M	0.86	0.29	3.43	0.29	0.43

Time	Couple		PS	PV	PNV	NV	NNV
Pre	NM7	F	1.33	1.11	2.89	0.33	0.11
		M	0.67	0.56	4.22	0.11	0.11
Post		F	1.80	0.30	2.40	0.10	0.00
		M	0.60	0.20	3.70	0.10	0.00
6 mths		F	1.10	0.30	2.50	0.00	0.00
		M	0.40	0.10	4.10	0.00	0.10
12 mths		F	1.60	0.50	4.70	0.00	0.00
		M	1.10	0.40	3.30	0.00	0.00

Control couples

Time	Couple		PS	PV	PNV	NV	NNV
0 mths	NM8	F	1.40	0.80	8.80	0.10	0.00
		M	0.90	0.50	2.60	0.00	0.80
6 mths		F	1.20	0.50	4.40	0.30	0.00
		M	1.10	0.50	2.90	0.20	1.60
12 mths		F	0.32	0.42	1.79	0.21	0.11
		M	0.84	0.00	1.37	0.53	0.53
0 mths	NM9	F	0.60	0.10	8.60	0.00	0.20
		M	1.40	0.30	4.20	0.00	0.50
6 mths		F	0.70	0.30	4.60	0.10	0.00
		M	0.80	0.60	9.90	0.30	0.00
12 mths		F	2.22	0.33	2.56	0.22	0.00
		M	1.00	0.44	3.00	0.33	0.11

Time	Couple		PS	PV	PNV	NV	NNV
0 mths	NM10	F	1.70	0.20	6.10	0.00	0.00
		M	1.10	0.30	4.50	0.00	0.00
6 mths		F	m.d	m.d	m.d	m.d	m.d
		M					
12 mths		F	1.29	0.59	2.82	0.71	0.00
		M	2.47	0.94	3.65	0.12	0.12
0 mths	NM11	F	0.80	1.10	3.00	0.20	0.00
		M	0.40	0.30	2.60	0.20	1.40
6 mths		F	0.70	0.80	2.90	0.50	0.00
		M	0.10	0.60	3.30	0.30	2.60
12 mths		F	1.88	0.50	3.38	0.00	0.25
		M	0.75	0.13	1.88	0.25	2.63

Control couples continued

Time	Couple		PS	PV	PNV	NV	NNV
0 mths	NM12	F	2.50	0.50	1.80	0.30	0.00
		M	0.60	1.30	5.60	0.00	0.00
6 mths		F	1.10	0.30	2.80	0.00	0.30
		M	0.40	0.30	6.50	0.10	0.00
12 mths		F	1.65	0.33	5.11	0.00	0.22
		M	0.44	0.56	8.00	0.00	0.00
0 mths	NM13	F	1.00	0.80	4.80	0.10	0.50
		M	1.50	1.50	2.10	0.10	0.00
6 mths		F	0.32	0.53	4.32	0.00	0.42
		M	0.63	0.42	2.11	0.00	0.00
12 mths		F	0.35	0.00	5.29	0.00	0.59
		M	0.59	0.24	1.41	0.00	0.00

Time	Couple		PS	PV	PNV	NV	NNV
0 mths	NM14	F	0.70	0.80	5.70	0.00	0.00
		M	0.50	0.00	2.60	0.00	0.00
6 mths		F	0.40	0.20	2.30	2.50	0.40
		M	0.10	0.20	1.30	2.30	3.20
12 mths		F	1.68	0.63	3.79	0.21	0.00
		M	1.26	0.11	3.47	0.00	0.00